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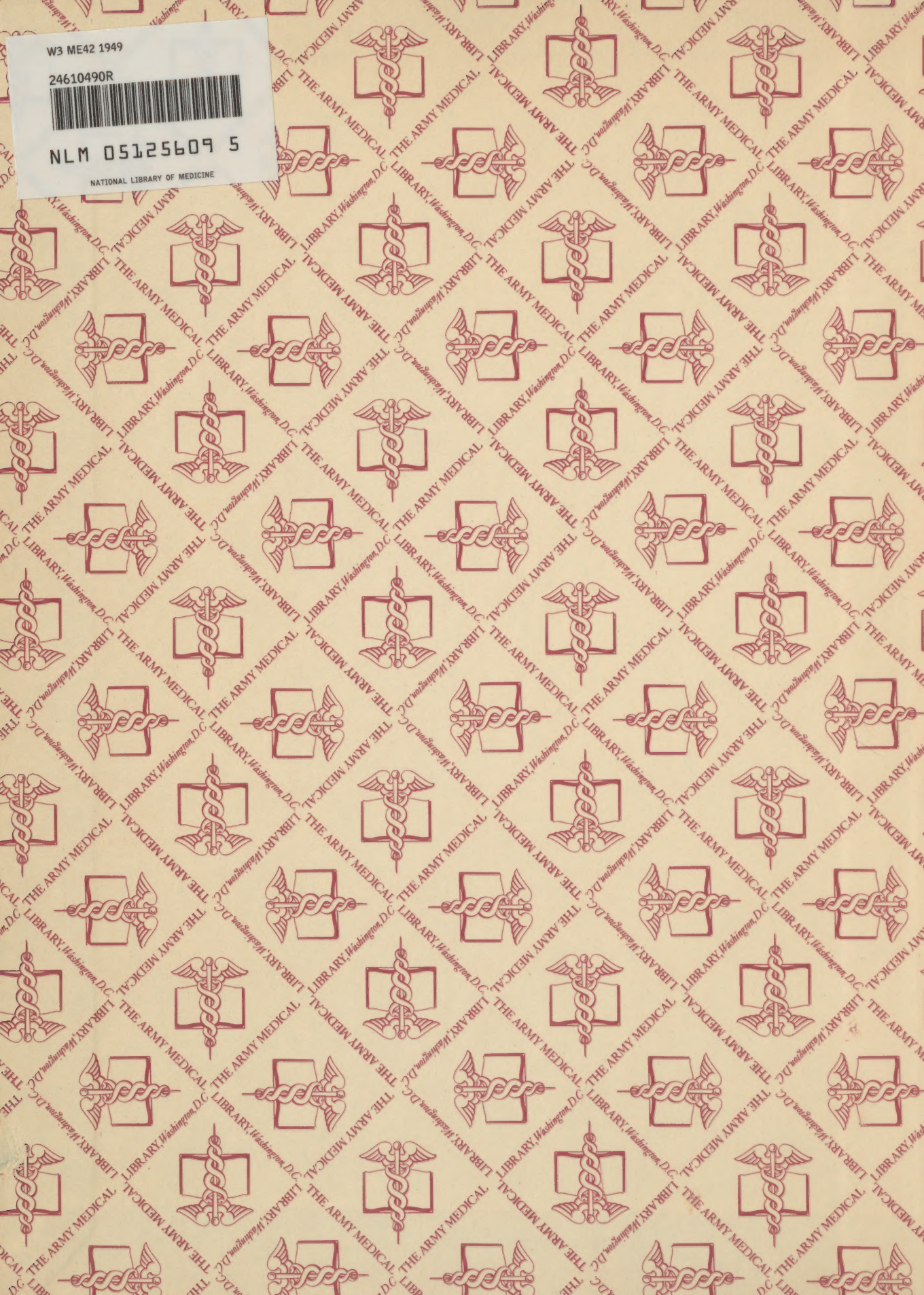
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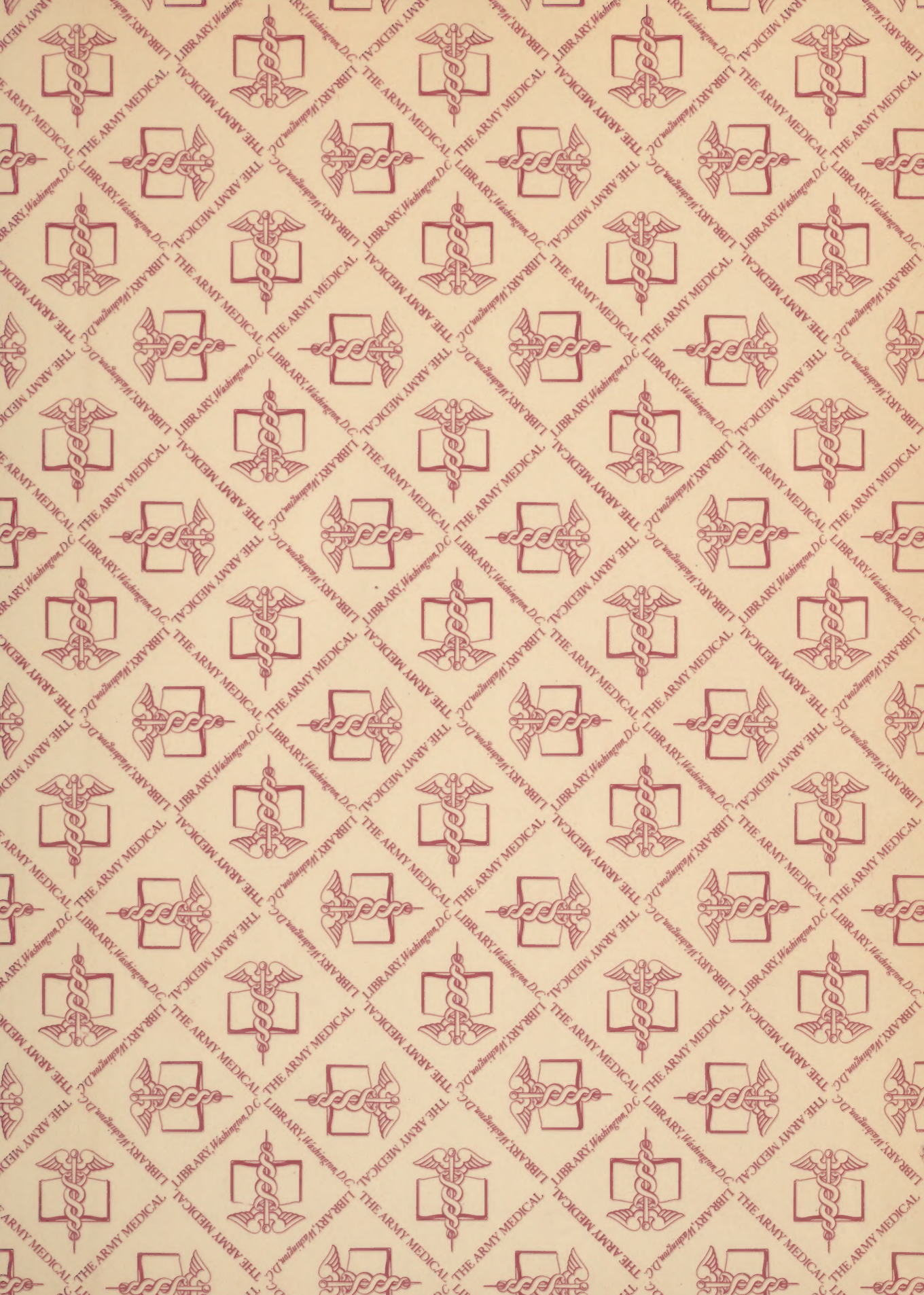
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PROCEEDINGS
OF
MEDICO — MILITARY SYMPOSIUM
FOR
MEDICAL DEPARTMENT RESERVE OFFICERS
THIRD ARMY AREA



21 — 23 APRIL 1949
OLIVER GENERAL HOSPITAL
AUGUSTA, GEORGIA

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GREETINGS FROM THE ARMY COMMANDER:

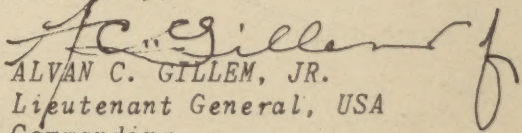
The outstanding success of the first Medico-Military Symposium held at Oliver General Hospital was most gratifying.

The sincere patriotism and keen interest displayed by the Medical Reserve Officers in devoting valuable time in attending this contact camp is greatly appreciated. The many favorable reports received attest that such meetings are well worth while and are desired.

Another Medico-Military Symposium is scheduled in October at Fort McPherson, at which time military and professional subjects will be presented by outstanding individuals who are qualified to speak with authority and experience. It is my hope that this meeting will be an even greater success than was our initial one.

I shall continue to give my wholehearted support to the Medical Reserve Program.

Sincerely,


ALVAN C. GILLEM, JR.
Lieutenant General, USA
Commanding

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PROGRAM

FIRST DAY

Thursday - 21 April 1949

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0800	Breakfast
0830 - 1020	Registration
1030 - 1120	Introduction - Colonel Rollin L. Bauchspies, MC, Surgeon, Third Army
	Address of Welcome - Brigadier General George W. Smythe, Chief of Staff, Third Army
1130 - 1215	Introduction of the Deputy Surgeon General - Colonel O. H. Stanley, MC, Commanding Officer, Oliver General Hospital
	Address by the Deputy Surgeon General, Department of the Army - Brigadier General George E. Armstrong
1230	Lunch
1330 - 1520	"ORC Plans and Policies" - Lt Colonel J. J. Hamlin, Civilian Components Division, AG Section, Third Army
	"Intelligence and the Medical Officer" - Lt Colonel Cornelius Lichirle, Executive Officer, G-2 Section, Third Army
	"Current Status of ORC Medical Units of Third Army" - Lt Colonel L. F. Keller, Chief, ORC Branch, Civilian Components O&T Division, G-3 Section, Third Army
	"Logistical Support of ORC" - Lt Colonel James H. Mahoney, Chief, Planning and Miscellaneous Branch, Supply Division, G-4 Section, Third Army
1730	Dinner

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PROGRAM

SECOND DAY

Friday - 22 April 1949

HOUR

0800	Breakfast
0830 - 0920	"Medical Department Procurement Program" - Colonel Paul I. Robinson, MC, Director, Personnel Division, Office of the Surgeon General, Department of the Army
0930 - 1020	"Medical Department Reserve Officer Training Program" - Colonel Charles K. Holmes, MC, Executive, Civilian Components, Office of the Surgeon General, Department of the Army
1030 - 1215	"Medical Aspects of Atomic Energy" - Colonel James P. Cooney, MC, Atomic Energy Expert, Office of the Surgeon General, Department of the Army
1230	Lunch
1330 - 1520	"Medical Department Professional Training Program": (Chiefs of Services, Oliver General Hospital) Colonel Charles L. Leedham, MC, Chief, Medical Service Colonel Earl Lowry, MC, Chief, Surgical Service Colonel Allan B. Ramsey, MC, Chief, X-Ray Service Colonel Walter C. Royals, MC, Chief, E.E.N.&T. Service Lt Colonel Joe Blumberg, MC, Chief, Laboratory Service
1530 - 1620	"Pre-invasive Cancer" - Lt Colonel Joe Blumberg, MC, Oliver General Hospital, and Dr Edgar Pund, Professor of Pathology, University of Georgia Medical School
1730	Dinner

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PROGRAM

THIRD DAY

Saturday - 23 April 1949

HOUE	
0800	Breakfast
0830 - 1000	"Clinical Pathological Conference" - Dr Virgil P. Sydenstricker, Professor of Medicine, University of Georgia Medical School, and Colonel Charles L. Leedham, Chief, Medical Service, Oliver General Hospital
*0830 - 0920	"Organization of the Medical Department and Oliver General Hospital" - Captain Anthony DeMattia, MSC, Oliver General Hospital
*0930 - 1020	"Medical Records and Reports" - Major Fernando Rojo, MSC, and Captain Hampton L. Antley, MSC, Oliver General Hospital
1010 - 1030	"Mutual Cooperation between Medical Schools and Army Hospitals in Undergraduate and Postgraduate Medical Education" - Dr G. Lombard Kelly, Dean, School of Medicine, University of Georgia
*1030 - 1100	"Manual of Courts Martial" - Captain Patrick E. Callaghan, MSC, Oliver General Hospital
1040 - 1200	"Surgical Problems" - Colonel Earl Lowry, MC, Chief, Surgical Service, Oliver General Hospital
*1110 - 1200	"Food Service" - Captain Robert I. Jetland, MSC, Captain Sidney L. Katz, MSC, Captain Helen R. Tremback, WMSC, Oliver General Hospital
1230	Lunch
**1330	Golf Tournament
1730	Dinner

* Optional for administrative personnel

** Participation optional

PROGRAM

FOURTH DAY

Sunday - 24 April 1949

(Optional)

HOUR

0800 Breakfast

0830 Golf Tournament

1230 Lunch

INTRODUCTORY

COLONEL ROLLIN L. BAUCHSPIES, MEDICAL CORPS

Surgeon, Third Army

General Smythe, General Armstrong, distinguished guests and fellow officers:

It is very gratifying to me to have the opportunity to open this meeting. Being able to witness this large assembly of Reserve officers, brought together voluntarily for the purpose of obtaining inactive duty training, is indeed a great personal satisfaction.

In the years preceding the outbreak of World War II, from 1936 to 1940, I was on duty as an instructor for the Organized Reserves in the State of New York. During that tour of duty I became quite familiar with the difficulties that were involved in effecting a program of instruction for Medical Department Reserve officers on an inactive status. I became convinced then that the solution lay, not in weekly, semi-monthly or monthly meetings in the form of troop schools, but in periodic meetings of a combined medical and military nature. At such meetings the Reserve officer would not only obtain a concentration of military information, but would also benefit by the presentation of medical subjects which had a direct relation to the military. These meetings would be arranged so that the Reserve officer would derive a definite benefit by his attendance -- not only from a military standpoint, but also professionally. In implementing such a program the meetings should be held in conjunction with the activities of a medical school or some large hospital. Although I had done a great deal of pick and shovel work in attempting to organize such meetings prior to the war -- my plans never materialized. Nevertheless, the conviction remained in my mind that this form of assembly was the best medium for conducting inactive duty training for Reserve officers of the Medical Department.

During the past year I have had the opportunity of attending meetings of Reserve officers in Memphis, Nashville, and Knoxville in Tennessee; in Jacksonville, Orlando, Tampa, St Petersburg, and Miami in Florida; and in Atlanta, Georgia. In some of these cities the efforts expended by the Medical Department Reserve officers are very commendable. In others there is still much to be desired. I shall not at this time discuss the many difficulties that are involved in getting Medical Department Reserve officers interested in attending regularly scheduled meetings. One of the chief factors is the lack of qualified instructors. Due to the shortage of physicians on active duty we cannot assign Medical Corps officers to such duty. We have in this Army area

nine Medical Service Corps officers on duty as instructors, and where they are on duty there is a continuing increased activity in Reserve affairs. It is hoped that competent officers will be soon available to provide an instructor for every military district.

The conducting of a Medico-Military Symposium for Reserve officers is not new with Third Army. I believe that the first such meeting was held in 1937 or 1938 at the Mayo Clinic in Rochester, Minnesota. Attendance there was purely voluntary, at the individual officer's own expense -- the only credit given was seven hours per day of inactive duty credit for each day's attendance. The first Symposium was conducted over a two week period. If my memory serves me well, a total of about 15 officers attended. Efforts were made along a similar line in several other parts of the country -- as I have already mentioned my own efforts in New York did not bear fruit. With the advent of the emergency of 1939, the calling to active duty of Reserve officers in 1940, and the beginning of the war in 1941, the training of Reserve officers was superseded by the call to active duty.

Since the end of hostilities elaborate plans have been made to effect a practical and realistic program for Medical Department Reserve officers. We are all aware that many inequalities existed during the recent war relative to the proper assignment of duties and in the matter of promotion for Reserve officers. Although the Department of Army is full cognizant with these factors and has attempted to correct them, there is still much left to be done in interesting the many thousands of former AUS and Reserve officers who have either not joined the Reserve Corps or have since resigned. I feel that we have not fully extended ourselves in approaching this latter group of officers who are by far in the majority. It is hoped that many of the answers to problems confronting you and which have been the cause of the lack of interest on the part of those who are not presently participating in the Reserve program can be given at this meeting. Before this conference is concluded an opportunity will be afforded to have you ask these questions and every effort will be made to answer them. At the same time you will be able to voice your opinions on the present features of the Reserve Program. I can assure you that the representatives from The Surgeon General's Office and we from Third Army Headquarters are very anxious to hear your views. One of the benefits to be derived from this conference is that of getting your ideas so that we can improve the Reserve Program and make it interesting, instructive and effective.

At the time we were preparing our program for this meeting we had anticipated having our new Deputy Commander of Third Army, Major General Paul J. Mueller, give the welcoming address, as General Mueller will be primarily interested in the civilian components of the Third Army. Unfortunately, General Mueller has not as yet joined Third Army Headquarters.

I have the pleasure of introducing to you this morning the present Chief of Staff of the Third Army, Brigadier General George W. Smythe. Since his graduation from the United States Military Academy in 1924, General Smythe has had an illustrious military career. Prior to World War II, General Smythe served with the Infantry School at Fort Benning, the United States Military Academy and Staunton Military Academy. He also served in Panama and Hawaii. During World War II, General Smythe was Regimental Commander of the 47th Infantry, 9th Division, and saw combat duty in both the North African and European Theatres of Operations. As the war reached its final stages he became Assistant Division Commander of the 80th Division. In recognition of his meritorious service, General Smythe has received the Distinguished Service Cross, the Silver Star, the Bronze Star and the Purple Heart. His regiment received a Presidential citation for action at the Remagen Bridgehead. In addition, he has been decorated by the French, Belgian, British and Soviet Governments. General Smythe is presently under orders for further service in Germany and will leave the Third Army next month. I feel that we are very fortunate to have General Smythe here this morning representing the Third Army Commander, to address you and welcome you to this conference. General Smythe.

ADDRESS OF WELCOME

BRIGADIER GENERAL GEORGE W. SMYTHE

Chief of Staff, Third Army

Distinguished guests, ladies and gentlemen:

It is a pleasure for me to welcome you here to this Symposium - that is a very fine word - in behalf of General Gillem and his Third Army staff, and to thank you for taking the time and effort to come to this particular type of meeting. We are deeply indebted to Colonel Stanley and his staff, in that they have allowed us to come and use their excellent facilities, and at the same time carrying on the daily workload.

It is regrettable that General Mueller was unable to be present, since he is going to be given the responsibility of directing Third Army ORC matters in the future. As you may know, Major General Charles W. Ryder has become the top man in ORC and Civilian Components in the Department of the Army, with a Staff Committee from the Directorates of G-1, 2, 3, and 4, plus the Services' Committees. I am not too sure exactly how those service committees are going to work as yet since the organization is in the planning stage. In our own headquarters, we are going to utilize the same general idea. General Mueller will have the prime responsibility in our headquarters for ORC activities working through a committee from the General Staff, plus the Special Staff members on their particular service.

I would like to take a few minutes to explain to you the difference in staff functioning. In the Department of the Army the services operate under the Director of Logistics. We do not agree with that principle of operation. Our Special Staff Officer is just as much a part of the staff as the General Staff. If training is involved, the Special Staff Officer coordinates with G-3 - he doesn't go to G-4. If it's personnel, he goes to G-1 - he doesn't go to G-4. We try to carry out the idea that if a man has a special staff assignment - and we think we have the best staff officers available in the Third Army at the present time - we guarantee you that he has the responsibility that goes with the job. If you don't get first class results, all you have to do is drop a note to General Gillem, or myself, and those responsible will have to step a little bit to explain why you are not getting first class results.

Now, Reserve affairs, of course, have had a rather uphill battle during these last two years. I believe that we can say that definite progress has been made. We can show in many places where we are at least getting to the stage of having armories which will enable us to carry out our training. The program is not an easy one. In fact,

it is a very difficult program when one actually sits down to analyze it. There is nothing that irks me more than to learn we have a Pontoon Bridge Company in Atlanta merely because we have two officers who served in a Pontoon Bridge Company during the war. That, to my mind, is the least reason why we should have a Pontoon Bridge Company in Atlanta. Where are they going to train? There is no place they can train in the Atlanta area. So, when you have such a situation existing, I am sure you will have to agree with me that there are many bugs in the program and they should be eliminated. We have just recommended to the Department of the Army the elimination of 150 Reserve units which are not necessary. They are not necessary because such units can be developed and trained after the war starts. And, of course, you gentlemen fall in a special category. You people are actually working at the job which you are going to do in case of war. Naturally, your particular training should be organized and handled in a different manner from some of the Table of Organization units. We appreciate the difficulties that a doctor has in his office hours or his hours in a hospital. There are many times you cannot come to a meeting because of particular difficulties. Those problems have a way of multiplying.

I was in Charlotte the other night, and I found that the only night they could meet - that is, the Reserve officers of the T/O&E units - was Monday night. The remainder of the week they are on the road as salesmen. That throws an undue burden on the Reserve instructor, because all his work has to be accomplished on Monday night. He cannot have the facilities available to take care of all units at one time. So, you see, it is not an easy matter - it is a rather difficult one.

We have just recently procured in Atlanta the finest facility for an armory that ORC could possibly have - the Ford Building. I believe this building is going to take care of all our normal Reserve functions in Atlanta, together with some active duty training, which will produce a very fine program next year.

To get back to this particular type of meeting for Medical personnel, I believe it is going to be a successful idea because we have conducted a very similar type for the combat Reserve officers in the way of contact camps. The Third Army Area has contributed more to Reserve Training because we have more to offer. We have two-thirds of all the troops that are in T/O&E units in the United States at the present time. Naturally, we do have more to offer, and I think the instructions the Reserves have been getting have been first class. I hope that this meeting is just the beginning of a similar group of meetings which will not be limited to Oliver General Hospital, but be spread throughout the Army area so that every Medical Reserve officer will have the opportunity to get back in and see what is going on.

I assure you there is a definite change in the attitude of officers and men as a result of World War II. Naturally, there is a distinct change of attitude on the part of the American public, which has been changing gradually over a long period of time. We are trying to bring into our training at the present time a series of ideas that were developed in the Universal Military Training experiment at Fort Knox. Basically, they run to about four thoughts. First of all, that all recruits go to church the first four weeks during basic training. There are too many men who say they are church men but who have never even been in a church. Fifty percent of the boys who were interviewed at Fort Knox said they were Protestants, but actually had never gone to church. So, we are making these boys go to church for four weeks, and if they do not go to church they must attend a similar lecture which brings out the same ideals. Secondly, we are especially careful in processing these boys. The so-called badgering and cussing of new men in the processing and training has been eliminated. The fitting of clothes is given a very special attention. Each man is given a series of twenty-one aptitude tests, with the idea of trying to fit the square pegs in the square holes and the round pegs in the round holes. That can't be done in every case to the satisfaction of all men. When one tries to fit every man to his own particular niche in the wall, they would all probably be colonels.

This reminds me of the story I ran across the other day - a general was inspecting a unit several weeks ago and he saw one man in the rear rank who didn't look very happy. So the general stopped and said, "Young man, what seems to be wrong with you?" The young recruit said, "I don't want to be in the Army." To this the general said, "Well, what's wrong with the Army?" The man said, "There isn't anything wrong with the Army, but I just don't want to be in it." The general said, "Well, don't you have some ambition to grow up and be a general?" The man said, "No, all I want to be is a colonel."

Our next important step was to improve conditions in the Post Exchange, turning it into a corner drugstore type of exchange. We stressed cleanliness, the use of booths and tables, and the elimination of beer as such from the exchange proper.

As a fourth improvement in our program, a special effort is being made to keep the trainees busy, particularly during off hours. Vocational schools are provided where typing, stenography, bookkeeping, auto mechanics and other selected school subjects are being taught. At the same time the special service club offers programs in music appreciation, dancing and record clubs.

I hope you have a very profitable stay here. We have several of our experts on Reserve affairs down with us, and I know Colonel Bauchspies has arranged an excellent agenda for you. I hope that you

do enjoy this program, and if you have any comments, criticisms or favorable ideas on this method and type of instruction, we will be most pleased to have them. I assure you that General Gillem is very anxious to see that the Reserve program gets across in the best manner in the Third Army Area.

THE ARMY MEDICAL DEPARTMENT

BRIGADIER GENERAL GEORGE E ARMSTRONG

Deputy Surgeon General, Department of the Army

At the outset I want to say to each of you, and especially to you who are not currently on extended active duty, that the effort you have made to be present at this meeting is greatly appreciated by the Medical Department. During ordinary times a meeting of this sort would be a fine thing -- a pleasant get together -- a time to meet with old associates and exchange some views, and perhaps catch for a few days, a bit of the esprit of Army life. These, however, are far from ordinary times.

As you all know, our Government by recent firm steps placed itself irrevocably and resolutely in the forefront among other free nations of the world in the crusade for peace and universal freedom. We will expand the role of leadership in this fight, by assisting other countries. There may be some people who believe that these recent firm steps we have taken may provoke the very aggression they are designed to prevent. I do not pretend to know what the future may hold, but in the present state of the world any measure has its attendant risks. Of this, however, I am convinced. Should war come, it will not be due to any measure we or the other free peoples of the world have taken, but rather that the aggressor, despite these measures, is determined upon a course of conquest. These few words on the international scene, as it were, are merely my way of expressing, and stressing the importance of a meeting such as this one, during times as fraught with tension as we are experiencing throughout the world today. It is all the more important, too, that you go away with a certain amount of gainful knowledge and that the efforts you have made by leaving your practices and positions are rewarded.

I believe the program outlined for your symposium is thorough and complete. My part, in so far as addressing you is concerned, is probably only a minor item, but I believe that some of the things I will tell you will be of interest. In the next several minutes I am going to attempt to outline some of the things that are going on to steal an old phrase, "behind the headlines" within the Medical Department, in order that you here today will know what we are doing for you, and, in the event you are called to duty, what we are going to do with you and with ourselves.

I think that rather than work from the bottom up, I will reverse the procedure and start by telling you of the high level boards on the Presidential and Secretary of Defense echelon and what they are doing

to create, or rather, assist us to create, in the way of better and more efficient medical service. I will say here in that connection, that everything we have been, are and will be doing, is with only one aim -- more efficient medical service.

The medical picture is initially "blocked in" on the presidential level within the Medical Advisory Council of the National Security Resources Board. The duties of this Board are synonymous with its name -- to calculate and evaluate all of our national resources, human and material, so as to pinpoint their location and potential usefulness in the event of a total mobilization. By the same token, the Medical Advisory Council, which incidentally is composed entirely of civilian doctors and dentists, is attempting to catalogue all classes of medical manpower throughout the country -- by catalogue, I mean, ascertain geographical location, professional qualification, estimate degree of physical fitness for various degrees of work, and the like. In addition to this task, and now I believe the tie-in with the military becomes obvious, the National Security Resources Board Medical Advisory Council makes recommendations concerning the utilization of medical manpower in time of national emergency. By that I mean, they estimate the bulk availability of these professional persons; and recommend distribution to the National Military Establishment, to industry, to civil defense and to the overall civilian needs. To date this group is in its embryotic state, but its eventual usefulness to the general public and the National Military Establishment will be very far-reaching.

The other newly created group is the Medical Advisory Committee to the Secretary of Defense. This Committee, headed by Mr Charles Cooper, and therefore in pentagon parlance called the "Cooper Board" and comprised of several outstanding civilian doctors and dentists, as well as The Surgeons General of the Army and Navy and The Air Surgeon, is charged primarily with ascertaining the most efficient means of utilizing the medical manpower made available to the National Military Establishment, and evaluating the requirements we of the Medical Departments give forth as our minimum needs.

By way of digression, an interesting commentary on the tasks assigned to a group such as the Cooper Board is, I believe, a resolution of the Joint Chiefs of Staff which was sent to Mr Cooper by Mr Forrestal on the first of last month which read, in part as follows: "The Joint Chiefs of Staff recommend unanimously that the Secretary of Defense immediately institute studies and measures intended to produce for the support of the three fighting services a completely unified and amalgamated (single) medical service." Mr Forrestal amplified this resolution by requesting that a high priority be given to such a study and that his office be kept informed of the status and progress being made of the report.

Intimately tied in with all the workings of the Cooper Board is a continuing study on that level, and down through to our own departmental echelon, of ways and means of conserving medical manpower and material while still maintaining the standards of efficiency we deem necessary. Such a study has been made by the Committee on Medical and Hospital Services of the Armed Forces, known as the "Hawley Board" (which by the way has been more or less replaced or succeeded by the "Cooper Board"), and as a result of this study the Secretary of Defense has recently directed a major move in the direction of consolidating hospital care for the National Military Establishment. This program essentially provides for joint utilization of existing medical facilities on an area basis with the underlying aim being to make the best use of limited medical personnel and effect all practical economy in the use of funds and supplies. In following out these recommendations, the Medical Services are in the process of closing four general hospitals, reducing two general hospitals to station hospital status, and further reducing 48 station type hospitals and Navy dispensaries to "Army" type dispensaries. One of the initial results of such moves will be the inactivation of some 7,000 odd beds through consolidation of inpatient treatment in fewer hospitals. As these studies are continued and as recommendations are approved, they too will be put into effect to the end that greater economy of personnel will be achieved.

In direct association with any recommendations of the Board or Committees I have mentioned, it is important to you to know that proper divisions function within the Medical Services for the implementation of such recommendations, and for the devising of such other ideas of economy and efficiency as are within the power of the Surgeons General to place into effect. Within the Medical Department of the Army and Air Force, the Medical Plans and Operations Division of The Surgeon General's Office is the implementing agency. Certain very important studies which this division has recently concluded and which The Surgeon General has approved for implementation, and which I believe will be of singular interest to all of you, are the following:

Firstly, Tables of Organization, these heretofore coldly impersonal columns of ranks and figures which enveloped most of us during our past careers (despite professional ability, length of service or anything else), have been made more flexible so that officers are no longer arbitrarily held to lower grades only because of their specialty. The newer tables will provide that there will be certain types of specialists in units, but the exact ranks of these officers will be determined by their age, experience and general qualifications.

Secondly, and a measure which will be cheered by all doctors and dentists who were forced to "hurry up" to join a unit and "wait" for months to be put to work, is this important addition to the new Tables

of Organization; a column called "professional complement". Into this grouping will go all those doctors, dentists, nurses and other scarce category individuals who are not needed unless the unit is actually carrying out its assigned mission. Further, the persons in this "professional complement" will not be required to join their unit until the latter is about to start functioning, and could, by the same token, be withdrawn when their services were no longer required. It can readily be seen that there will not need be as many of these "complements" as units, so there will not only be a deferred need for these individuals but the need, once a tactical operation is on, will be continuing, for this complement will be utilized to staff other units as the patient rates recede in one particular area and rise in another. I believe this is one of the most important steps taken in the direction of economic utilization of medical professional manpower.

Another policy, which will please all medical men who have been hampered by administrative duties and vast amounts of paper work in the past, is the approval by The Surgeon General, that officers of the Medical Service Corps may be assigned as executive officers in all hospitals, including named general hospitals. This is another concrete step in the direction of eliminating all non-professional activities for professional personnel. This policy, which admittedly did not function as totally as we would have liked during the last war, was recently checked on a world-wide basis by The Inspector General of the Army, who reported that Medical Service Corps Officers were in actuality relieving doctors and dentists of all duties of a non-professional nature. This last step, I believe, completes our task on that score and will, by its continuing practice, eliminate the many "rightful gripes" regarding a "paper war" put forth by medical men in the past.

I hope that what I have said thus far has brought you into focus with the workings on the level of national defense and Chiefs of Staff down to the Office of The Surgeon General and thus the Medical Department itself. Our method of improving our service through carrying out policies of higher levels is but one facet of the entire task which all harks back to my earlier statement, of the constant desire to achieve better and more efficient medical service.

One of the most successful means of achieving the much needed balance between civilian and military medicine, and by that I mean continuing the flow of knowledge from skilled civilian teachers to those on duty in the field, is through the Society of Medical Consultants of World War II. This Society, composed of some of the most outstanding American men of medicine who saw service during the last war, meets frequently with the chiefs of the divisions of The Surgeon General's Office to discuss ways and means of maintaining our level of technical efficiency. In addition to this, there has been instituted a program of planned consultant trips to our medical installations both in the United States and overseas. These teams of consultants, composed of three or four specialists of varied skills, go to our hospitals, assist

in the training of our doctors, help diagnose cases, hold seminars, make rounds, operate or assist in operations, and generally do much towards furthering the education and training of younger men. They also aid in the elimination of any possible professional stagnation which might perhaps arise. Although I frankly feel that this possibility is less likely to appear among a group of doctors and dentists than any other type of professional man. One last, but very important contribution of these travelling consultants is their report on the professional status of our hospitals at home and abroad. These reports, rendered directly to The Surgeon General, by men who "pull no punches" and of whom we have asked for honest and true evaluations of our system of medical service, have been extremely helpful in assisting us to remedy any errors which have been evident. These recommendations have resulted in changes which can only be termed great improvements for our service. In this connection, it is with pardonable pride that I say that the vast majority of the reports we have received have been most complimentary of the type service being rendered by our doctors and dentist and of the manner in which our hospitals function. We have been especially pleased when we have received reports which out-rightly placed some of our teaching hospitals on a par with civilian counterparts.

At this juncture, I should like to again digress, and expand on a statement I made a moment ago regarding a balance between civilian and military medicine, I really feel that this statement was ill phrased -- for, to me, there is no longer any such line of demarcation as my phrasing might have inferred. There is no such thing as "our Army, Navy or Air Force" as a thing apart from the general public -- more so, if possible, there is no such thing really as a military medical service vis-a-vis civilian medicine. The success attained during the last war was not because of military medical personnel or procedure alone nor by civilian medicine alone -- it was by combining the two that the unbelievably splendid record was attained. Today that same marriage of the military and civilian professional world is an equal necessity. This last, I believe, can be construed as an understatement, for it is more necessary that we be at a oneness today and in the future than ever before. If the task of military persons is to be prepared for war -- then the task of the civilian population is to be prepared for defense of itself. Perhaps in some fields of endeavor these two can be divorced. In medicine they must be one. The matter of civil defense of large masses of people, both in matters of foodstuffs and health, is getting wide attention in our overall strategic planning. A Civil Defense Planning Board is operating today within the National Security Resources Board and functions in matters of total civil defense. Taking the obvious inference of this situation alone, it becomes clear that the give and take between civilian and military medicine is non-existent and that there is and must be a constant flow from one to the other.

The picture becomes still clearer when one considers the education and training program of the Medical Department. The military interns and residents on duty in our Medical Department teaching hospitals, are taught their skills by older board-qualified men in uniform, and also by consultants to The Surgeon General who come from university-teaching medical institutions and supervise their work. Conversely, the Medical Department trains interns and residents directly in civilian institutions in those specialities for which we do not have sufficient instructional material or the like. In this respect, further, the Medical Department will shortly place two additional general hospitals in the category of "Teaching institutions". These two are Tripler and Valley Forge. At the former we will have the assistance of qualified civilian doctors in Hawaii and at the latter, qualified teachers from the great university hospitals in and around Philadelphia will augment our staffs. These are just further manifestations of the theory that military and civilian medicine is in reality one and the same. We attempt, in the Medical Department, to pursue this theory to its fullest by making changes in our programs as they are indicated in order to incorporate the civilian medical application of practice into our own actions.

In line with this type of elastic change, our Education and Training Division has given considerable thought to the Medical Department Reserve Officers' Training Corps Program. In the past these Medical ROTC's were given Summer Camp training of a type similar to other Corps. Emphasis was placed on the military phase rather than the medical technical phases of this training. Last Summer, at Brooke Army Medical Center, we found ourselves with an ROTC Camp comprised almost totally of former servicemen. It was obvious that their interests could not be held by military field exercises, drills, first aid demonstration or the like. Therefore, in the middle of the course, we revised our schedule and substituted medical subjects in place of purely military. This year we are going still further. The Education and Training Division has obtained General Staff approval to place veteran ROTC Medical and Dental students in general hospitals for a period of clinical clerkship in lieu of the Summer Camp field training. The responses we have had to this new innovation have been most heartening. All but a score of the ROTC students queried as to their desires responded affirmatively to this plan, and, therefore, it is being put into effect and will continue as long as a sufficient number of veterans are in the ROTC Medical program. Within a few years, naturally, these former servicemen will have graduated and we will at that time again modify our program so as to include military training for those without prior service.

I mentioned above the military medical personnel taking training at civilian institutions. It is of interest, I think, to point out that many of these doctors, dentists and veterinarians are largely responsible for the tremendous interest being shown by the ROTC students.

This is true because the officers "double in brass" at the civilian institutions by taking on the additional duty of Professors of Military Science and Tactics. During the Fiscal Year 1949 a total of 75 PMS&T's were taking professional training courses in civilian institutions and at the same time actively participating in the ROTC program of the particular institutions. The training these men are taking, incidentally, includes courses in the medical, surgical, dental, veterinarian and miscellaneous technical specialties of the Medical Department.

I do not intend to place any stress on the very serious impending shortage of personnel in the Medical Department during this talk today, in as much as Colonel Paul Robinson, the Chief of the Personnel Division of The Surgeon General's Office, will address certain pertinent and informative remarks to you on this important subject later during this meeting. I do feel, however, that it is of interest to note the part that our education and training program is playing in our endeavor to combat this problem. During the first half of Fiscal Year 1949 a total of 233 interns were selected for service and will begin this service in 9 Army General Hospitals plus Gorgas Hospital on July 1st of this year. In addition a total of 355 candidates for residencies were placed in training during the same period -- that is in military hospitals. Among these lines, too, we have been able to increase the total number of permanently approved programs from 36 to 52. Again, concerning the training of Medical Department personnel at civilian institutions, a total of 324 were placed in training during the period I mentioned above. I believe that our education and training program is built on solid ground and that it is so constructed that the interest of the individual, as well as the good of the medical service and the Army as a whole, is taken equally into consideration. We appreciate fully the well known characteristic of individuality borne by all professional men -- and the famous or infamous -- one of "rugged individuality" so proudly worn by doctors. This mantle of singularity is easily turned into an asset to the Medical Department by the medium of giving opportunity for advancement in professional attainment through our program of education and training of all members of our Department.

I spoke, merely in passing, some moments ago of the matter of civil defense planning, and at some greater length of the oneness of military and civilian medicine. I should like to conclude this talk today, by pursuing this theme a bit further. To do so is quite compatible with my opening remarks concerning the present tense world situation -- for paradoxically enough, the small, that is percentagewise, segment of our population known as professional men (and now I am referring to men of the medical arts and sciences) must and will assume far greater importance and responsibility in the event of another national emergency, I breach no confidences, I am sure, when I say that any future war will bring the carnage of battle to our shores. In this connection, it can be said that the very survival of the nation may well depend upon the doctor in a future conflict. The nation as a whole is gradually be-

coming aware of this fact and it is no mere passing phrase to say that our governmental leaders are becoming increasingly aware of it now. The Office of Civil Defense Planning has been created for the purpose of evaluating this situation and of taking steps to effect maximum utilization of all professional manpower for civil defense just as the National Military Establishment must evaluate maximum utilization for military fitness. The extent to which civilian health has recently been a military responsibility may not be generally appreciated. We need but to look behind the newspaper stories concerning military governmental activities, however, to realize that Army medical officers have supervised the reestablishing of health services for 140 millions in Europe and for 80 millions of Japanese, and for inhabitants of the Philippines and Korea. In addition, and less well known, is the matter of policing the health of 16 million migrants from 32 countries in Europe, those displaced persons -- plus a similar type mission involving 6 million Japanese during repatriation from 19 Asiatic-Pacific Areas -- I have little doubt but that some of you gentlemen here today, who were on duty overseas at the end of the war, assisted in some of this health service. In so doing, you were participants in laying the foundation for our entire structure of civil defense planning in matters of health of whole populations during and after any major emergency. Considering this matter further, where human reckoning in health, suffering and death, reached thousands in the past, it could reach millions in the future. We doctors, therefore, must be prepared to meet this problem. The participation of the medical profession must come in various areas. It must be applied in national, state, and local governmental patterns. It must be efficiently and economically applied to our own civil and military populations. It must be so well planned, organized and administered that we may be sure of proper health for the millions of people, at home and abroad, who no longer can remain aloof or shield themselves from the health hazards of war, even though they not be in actual combat engagements. You have the right to say to me that this is all very well, but if war came to us in the immediate future we would be uninformed as to the patter of action envisioned by the Civil Defense Planning Board. This is true, but there are certain ways in which you can currently organize your efforts within your communities despite the absence of this national pattern. For example; If you already have an Emergency Medical Service Committee, you can support it fully in its effort both within the society and in its dealings outside with civil administrators and like groups; you can support a continuing inventory of your entire medical and related health resources, classifying them in a manner, which would permit easy and rapid call-up as well as ready comparison with military and other resources outside your community; you can develop emergency standards of minimum levels of health service that would be made to suffice, so as to establish priorities for allocation of your resources from time to time; you can determine, as you wait for a national pattern, what you could and would do in a major medical emergency -- above all, you can search

out all of the civil administrators and special planning and control groups of your communities and stimulate, through your enthusiasm and earnestness, their interest in this most important program. I do not, by any stretch of the imagination, mean to stand here and breathe a black cloud of impending disaster, but if "necessity is the mother of invention" then surely "preparedness is the averter of ruin".

A last few words, not necessarily in a lighter vein, but more in the immediate present. You gentlemen have displayed a fine spirit, as I have said earlier, in coming to this meeting. It speaks well for the Medical Department and the country that despite all the "let George do it" attitude we hear and read so much about, practical proof to the contrary is always cropping up to disprove the pessimistic diehards. This meeting cannot help but be successful and fruitful to us all. The efforts expended by General Gillem, Colonel Stanley, and others to bring it into being, and the fact that you are all here to participate in it, alone makes it a success -- I wish to thank all of you.

ORC PLANS AND POLICIES

LIEUTENANT COLONEL J. J. HAMLIN, AGD

Civilian Components Division, AG Section
Headquarters Third Army

General Armstrong and fellow officers:

It is a genuine pleasure to be with you this afternoon and I sincerely hope that the material which I am about to present will be of interest to you. My discussion will consist of two major parts. First, I would like to give you an overall picture of the Civilian Components Program, including past, present, and future plans. Second, I shall endeavor to give you a clear picture of the Retirement Plan as it pertains to members of the Organized Reserve Corps.

As we all know, it has been our military tradition to maintain a small professional Regular Army. Thus, our Military Establishment has consisted largely of Reserve components in various stages of training and readiness. We have had the National Guard organized to take the Field immediately at the call of the President in the event of national emergencies or at the call of a State Governor in local emergencies. For additional strength, we have depended upon members of the Organized Reserve Corps, some of whom have been immediately available and others as an emergency progressed. The potential state of readiness of these sources of military power was a fundamental consideration in planning the present structure of our military establishment. (Chart 1). In support of my preceding statements, it is interesting to note that at peak strength during World War II, approximately 5% of the total male commissioned personnel was furnished from the regular establishment and approximately 2% was supplied from National Guard sources; the remaining 96% consisted of Reserve and AUS officers.

Immediately following the late war, the Army found that due to conditions brought about by the war, its civilian components were practically non-existent. However, the Reserves showed intense interest in reviving their programs as rapidly as possible. At that time, the general attitude prevailed that many years of peace were ahead and that Reserve forces would be filled to required strength with trained personnel through universal military training. No analysis had been made as to what the future national situation held in store for our country. Very little thought had been given to the strategic concepts to be employed in the event of war or the budgetary limitations likely to prevail in peace time. Early in 1946, it became apparent that our forces had been demobilized too rapidly and that a plan must be developed immediately which would provide forces adequate to meet any emergency which might arise. Consequently, shortly thereafter, a mobilization plan was approved for adoption by

U.S. ARMY (INCL. AIR)
PEAK MALE COMMISSIONED PERSONNEL
WORLD WAR II (1945)

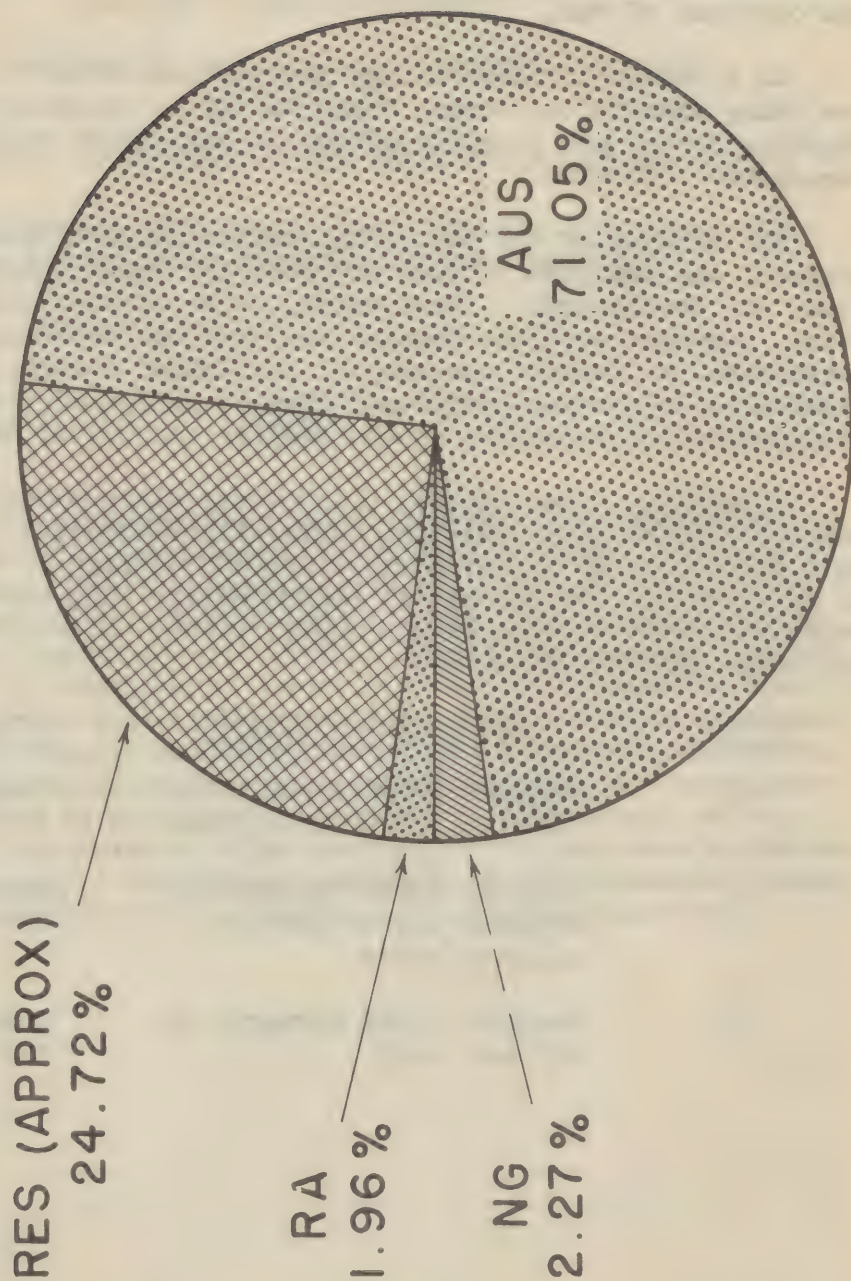


Chart 1

the Department of the Army. Based upon this mobilization plan, as a requirement for recognizing the necessity for reconstituting the Reserve components as rapidly as possible, Troop Bases were developed. It was constantly visualized that Mobilization Day and D-Day might coincide and that there might not be a period of mobilization prior to the outbreak of war.

As a result of those things just mentioned and in order to avoid the delay experienced during World War II in building an effective fighting force, all possible effort is being made to keep civilian components effective.

The mission of the ORC is to provide units effectively organized, trained, and equipped in time of peace for rapid mobilization, expansion, and development. These units, to be of the types and numbers which, together with the Regular Army and the National Guard, will constitute the team of the Army of the United States. Its secondary mission is to provide additional trained personnel for necessary replacement and expansion of the Army of the United States.

(Chart 2.) The National Guard Troop Basis provides for 5,680 units, of which 4,417 have been Federally recognized. Included in this figure are 25 Infantry and 2 Armored Divisions. Present strength of all National Guard units is approximately 325,000. Insofar as the Organized Reserve Corps is concerned, present plans of the Army provide for three major type units:

<u>TYPE</u>	<u>AUTHORIZED STRENGTH</u>	<u>AUTHORIZED EQUIPMENT</u>
A	Complete T/O&E Strength of Officers and Enlisted Men	Complete T/O&E (25% Vehicles)
B	Complete T/O&E Strength of Officers and at least an enlisted cadre	Essential Equipment for home training
C	Complete T/O&E Strength of Officers only	Essential Equipment for home training

NATIONAL GUARD TROOP BASIS

NUMBER OF NATIONAL GUARD UNITS TO BE FEDERALLY RECOGNIZED UNDER NATIONAL GUARD TROOP BASIS:

5,680 - Includes 25 Infantry and 2 Armored Divisions

NUMBER OF NATIONAL GUARD UNITS FEDERALLY RECOGNIZED

4,417 - Includes 25 Infantry and 2 Armored Divisions with
1,263 divisional units remaining to be recognized

Chart 2

(Chart 3.) The Department of the Army T/O&E Troop Basis provides for the activation of approximately 11,367 Reserve units including 17 Infantry, 5 Airborne, and 3 Armored Divisions. At the present time, it is proposed that of the 11,367 Reserve units, approximately 5,180 will be of Type A, approximately 2,864 of Type B, and approximately 3,323 of Type C. In addition to these T/O&E units, a separate Troop Basis provides for the activation of various types of Table of Distribution Units which through necessity must be of a flexible structure. In order to provide adequate and appropriate training for those individuals not assigned to Organized Reserve Corps Troop Basis Units, hundreds of Organized Reserve Corps Training Units have been organized throughout the country. The present strength of the Organized Reserve Corps is approximately 700,000 officers and enlisted Reservists.

NUMBER OF UNITS TO BE ACTIVATED UNDER
DEPARTMENT OF THE ARMY TROOP BASIS:

11,367 - Includes 17 Infantry, 5 Airborne and 3 Armored Divisions

NUMBER OF UNITS TO BE ACTIVATED UNDER EACH MAJOR TYPE:

<u>TYPE</u>	<u>NUMBER</u>
A	5,180
B	2,864
C	3,323

Chart 3

The present international situation, coupled with failure of enactment of universal military training legislation and lack of funds for full implementation of the planned program, has necessitated development of a phased program for the Army of the United States, which will permit us to improve our combat capabilities and to provide a ready force capable of early response to meet any future emergency. This troop program contemplates that, as a first objective, a force of 18 divisions and supporting troops will be made effective by 1 July 1949. This 18 division force will consist of 12 Regular Army Divisions and 6 National Guard Divisions backed up by the necessary Regular Army, National Guard and Organized Reserve Corps combat and service supporting elements as funds, facilities and equipment become available and will provide a minimum of forces upon which we can depend for early commitments. It does not lessen our over-all mobilization requirements but defines, in terms of divisions, an initial operational force toward which our maximum efforts, insofar as funds, equipment, facilities and training are concerned, must be pointed. In general, it is contemplated that units in the 18 to 25 Division force will be fully equipped, manned and trained. The remainder of the Reserve component elements will have to be equipped and provided with other facilities on a lower scale unless and until funds are available to furnish the remaining mobilization requirements. Full implementation of this 18 to 25 division program will necessarily involve priorities within the National Guard and Organized Reserve Corps.

There have been many problems in connection with the Reserve program, which began 1 July 1946. Being Americans, we are all impatient and want things done right away. As a result, at times we do not notice the progress that has been made. However, when you look back and see how the greatest army that the world has ever seen was reduced to a mere fraction of itself and still left with many commitments both at home and overseas, it can be realized why the Reserve program was slow in getting started. It is harder to climb uphill than to go downhill, but the upward climb is being made.

The ORC is probably the most complex military establishment that has ever been devised. In it are included units of all known types, everything from Airborne Divisions and Logistical Divisions to Laundry Detachments, and most units of each type are designated to exist in three different states or organization and equipment. To organize and prescribe training for such a ramified establishment involves a great deal of pioneering. Everyone is generally agreed on the what, the when, and the why, but opinions as to the how have been widely diverse. We have endeavored to implement a workable program in sensible and effective ways and within the means at our disposal.

Now, I'd like to tell you some of the problems. First of all, the extent to which the Reserve program can be implemented depends on the moneys appropriated by the Congress for the ORC. Every step and contemplated action to be taken, must first be measured as to its cost and the funds must be set aside to pay for that particular activity.

In general, facilities for classrooms, armories and storage space are inadequate. The shortage of funds for this purpose has probably handicapped the ORC program more than any other. Constant efforts are being made to correct this situation at all levels. Requirements for priority of construction of armories have been submitted to the Department of the Army. A continuing study is being made in this respect to further joint usage of facilities and requirements of new construction needed to accommodate the civilian components program. Department of the Army representatives appeared before a congressional committee in March and presented the recommendations and requirements for all portions of the Army. However, in spite of these difficulties progress has been made. Authority has been granted for the rental and renovation of facilities for the ORC in many of the larger cities throughout the Third Army Area. Although the actual construction may not be finished at the present time, some of the obstacles have been hurdled.

Now, a word on instructors. We are short the total number of instructors required to handle the duties in connection with the organization, training, supervision and administration of the ORC units

and personnel in their assigned localities. Constant efforts are being made to improve this situation. We have furnished the most capable officers we could find for these assignments. And, incidentally, a great number of the unit instructors are Reserve officers on Extended Active Duty.

CREDIT HOURS AND RETIREMENT POINTS. Legislation of great interest to members of the civilian components was recently passed by the Congress. The act referred to, known as Public Law 810, entitled the "Army and Air Force Vitalization and Retirement Equilization Act of 1948" was signed by the President on 29 June 1948. Only Title 3 of this Act pertains to the civilian components but it presents an entirely new concept, viz: the granting of non-disability retirement pay to non-regular personnel. For your information and convenience, I have reproduced copies of this act which I will make available to you at the conclusion of my talk.

The benefits for military service received under this Act are in addition to other non-disability retirement benefits such as social security, or private pensions, or annuities under the provisions of Section 5 of Civil Service Retirement Act of 29 May 1930. The primary purpose of the Act is to vitalize the civilian components for service in time of emergency and to provide an incentive for the maintenance of membership therein over a long period of time. It is not expected that everyone who becomes a member of a civilian component will qualify for these benefits. There must be a definite relationship between service rendered and benefits received. Those who do not meet the required standards of performance will be placed in an inactive status or separated from such component.

In general, the Act required that a Reservist, in order to qualify for retirement, must reach the age of 60 years and must have completed 20 years of satisfactory service, both active and inactive service being considered. The last 8 years of this qualifying service must be as a member of a civilian component in either active or inactive status. It is not necessary that he be a member of a Reserve component at the time of his application for retirement providing he is otherwise qualified.

The method for arriving at the amount of retirement to which a Reservist may be entitled upon attaining age 60 includes two operations, viz: (a) The calculation of the total percentage due the Reservist for his entire period of service which is arrived at by multiplying the total number of years of active Federal service satisfactorily performed plus additional years of inactive service convertible to the equivalent of active service by a system of "points" by $2\frac{1}{2}\%$. (b) The application of this total percentage to the pay, including longevity of the highest grade attained by the Reservist during the entire period of his service.

In order to earn a year of satisfactory Federal service or "satisfactory service" toward retirement, a total of 50 retirement "points" must be earned. A distinction between these retirement points and "credit hours" must be borne in mind. Both are earned concurrently by effort on your part but they serve different purposes. An important fact to be remembered is that a minimum of 30 credit hours must be earned during a calendar year for retention in the Active Reserve. Retirement points are credited upon a fiscal or "anniversary" year basis.

Credit hours are the actual hours you spend engaged in activities which are either supervised by or are approved by ORC instructors or an Army Commander. They are awarded to you upon an hour for hour basis for time actually spent in civilian components activities. If you do not earn a minimum of 30 credit hours in each calendar year, you will be transferred to the inactive Reserve, or, if you are eligible, to the Honorary Reserve. I believe that, upon consideration, you will agree that this minimum requirement is a most reasonable one.

Now we come to what credit hours mean to you. They are, to make a comparison, like "stepping stones" to:

Membership in the Active Reserve

Assignment to Reserve Units

Inactive Duty Training Pay

Promotion

Non-Disability Retirement Points

They are earned on an hour for hour basis which is not true of retirement points. If you are interested in retirement and set out to earn the required number of points per year, the matter of credit hours will be one of minor importance to you for the reason that considerable more time and effort is required in the acquisition of the necessary points than is the case in accumulating the necessary number of hours.

Now to concentrate upon the consideration of these retirement points. They may be likened to premiums on a retirement insurance policy which pays off at 60 years of age. The more points you earn toward retirement, just as the more dollars you pay on an annuity, the more your return will be at maturity. They are earned by the same method as are your credit hours. To be eligible for retirement you must earn at least 50 points per year for a minimum of 20 years.

CREDIT HOURS & RETIREMENT POINTS

I. MINIMUM REQUIREMENTS

For retention in the Active Reserve - - - - - 30 Hours accumulative upon a calendar year basis.
 For completion of a "Year of Service" toward Non-Disability Retirement - - - - - 50 Points accumulative between 29 June of one year and 28 June of the next succeeding year.

CREDIT HOURS

30 hours per calendar year - minimum required for retention in the Active Reserve.

POINTS FOR YEAR OF SATISFACTORY FEDERAL SERVICE

35 points must be earned within a "year of service." May be acquired by active or inactive service or a combination of the two.



15 points for calendar year of membership in Active Reserve. Credit dependent upon completion of 30 hours.



50 points minimum for year of satisfactory service.

- Only members of an active Reserve component are qualified to earn hours of credit and points for retirement.
- A minimum of 50 points must be earned for a "satisfactory year of service"; however, all points acquired remain credited.
- One point will be credited for each day of active Federal service up to a total of 360 points in any given year of service.
- Not more than 60 points will be credited for inactive Federal service in any one year of service.
- Points, up to an aggregate of 60 per year, may be earned by either active or inactive Federal service or a combination of both and all will be credited. Points in excess of this maximum, if earned by Active Duty Training or upon Extended Active Duty, will be credited at the rate of 1 point for each day of such active Federal service performed.
- Proportionate parts of the 15 points for membership in the Active Reserve will be credited for a portion of a year, providing a corresponding fraction of the total points required for a satisfactory year of service have been earned during the period involved.
- Prior to 29 June 1948, each year of membership in an active Reserve component will be considered a year of satisfactory Federal service, and 50 points per year will be credited for such service, other than active Federal service which will be credited in addition thereto.

2. TO BE ELIGIBLE FOR NON-DISABILITY RETIREMENT INDIVIDUAL MUST:

- Have performed satisfactory Federal service in an enlisted or higher grade in any component of the armed services.
- Have completed an aggregate of 20 or more years of satisfactory service in a component or components of the armed services.
- Have performed active Federal service during any part of the periods between 6 April 1917 through 11 November 1918 and/or 9 September 1940 through 31 December 1946, if a member of a Reserve component before 15 August 1946.
- Have served the last 8 years of qualifying service as a member of a Reserve component.
- Have attained the age of 60 years.
- Apply for retirement.
- Not be eligible for any other retired pay for military service.

3. METHOD OF EARNING CREDIT HOURS AND POINTS

HOURS CREDITED	ACTIVITY	RETIREMENT POINTS
Number of hours prescribed for each course as shown in lessons and in annual Announcement of Army Extension Courses.	Army Extension Subcourses.	1 point per each 3 of prescribed hours completed.
Hour for hour of duty performed except that no more than 8 hours will be credited in any one day.	Active Duty Training.	1 point per day of actual duty.
1 hour for each hour of instruction but not to exceed 2 hours for any one assembly. More than one assembly may be held in one day but total credits will not exceed 8 hours.	Attendance at classes or training assemblies.	1 point for a minimum of 2 hours but no more than 1 point per day, irrespective of the number of assemblies held.
3 hours for each hour of instruction; 1 hour for presentation and 2 hours for preparation or three times the credit given the student but not exceeding 8 hours in any one day.	Instruction of classes or training assemblies.	1 point for each period of instruction. 1 additional point for preparation of each hour of instruction satisfactorily prepared but not to exceed 2 points for one period of instruction. Preparation points must be credited on a day or days preceding date of assembly or class.
Hour for hour of time actually spent on duty but not to exceed 8 hours in any one day.	Recruiting - Office of Selective Service.	1 point for 2 or more hours but not to exceed 1 point per day, certified to by Rotg Officer or representative of Director of Office of Selective Service Records.
Hour for hour of actual time spent but not to exceed 8 hours in any one day.	Administrative duty as a member of a Board convened by order of an Army Commander.	1 point for a minimum of two hours but not to exceed 1 point per day.
1 hour per examination or service but not to exceed 8 hours per day.	Physical examinations or equivalent professional work by specialists.	1 point per each 3 examinations or equivalent services but not to exceed 1 point per day.
8 hours for each full day of training.	Inactive status training with units of Regular Army, National Guard or ORC or at General or Special Service Schools.	1 point per day or fraction in excess of 2 hours thereof. Certification of Commanding Officer of unit to which attached is required.
2 hours for each hour of actual flying but not to exceed 8 hours in any one day.	Flying military or civilian aircraft by rated liaison pilots.	1 point per hour of flying but not to exceed 1 point per day.
Hour for hour of duty but not to exceed 8 hours in any one day.	Procurement planning and Industrial Mobilization - Training by scientists and individuals having D of A Mobilization-Day assignments.	1 point per 2 hours or more of duty but not to exceed 1 point per day certified to by representative of office of Asst Secretary of Army.
Hour for hour of duty but not to exceed 8 hours in any one day.	Other Services - as directed or authorized by Representative of Chief of Army Field Forces.	1 point per 2 or more hours of duty but not to exceed 1 point per day.

Hours credited for inactive duty will be granted only for activities that are supervised or previously approved by a Unit Instructor or other officer authorized by the Chief, Army Field Forces.

Subsequent to 29 June 1948, all points earned, in any year, will be credited to the individual and will be used in computing the amount of retirement pay, even though the minimum of 50 points was not earned for a year of satisfactory Federal service.

Personnel otherwise qualified may receive credits for on-campus instruction of ROTC Units at the rate of 3 hours for each hour of actual instruction but not to exceed 8 hours per day and 1 point credit.

Prior to 29 June 1948 a "year of service" constituted any 365 days, not necessarily consecutive.

The "year of service" for persons reentering service after 29 June 1948 will end upon the annual anniversary of such entry or reentry.

Prior to the enactment of the law each year of inactive Federal service is arbitrarily credited as 50 points. Active Federal service, irrespective of when performed is credited at the rate of 1 point for each day of such service.

I will now resort to the use of charts which will show you the method by which credit hours and retirement points may be accumulated, the amount may be earned in each authorized activity and the requirements necessary for establishing your eligibility for retirement pay. From these charts you will note that the requirements for earning retirement points are somewhat higher than those for the acquisition of credit hours. (Charts 4, 5, and 6.)

This concludes my talk and I regret that time will not permit me to cover other aspects of the Reserve program which may be of concern to you. I consider it an honor to be here this afternoon and I sincerely hope that I may have the pleasure of being with you again in the near future.

COMPUTATION OF NON-DISABILITY RETIREMENT PAY

Major "B" was originally appointed direct from civil life as a Captain on 1 August 1942 at the age of 42 years. He was promoted to his present grade on 15 December 1944. He is assigned to a service type training unit. He desires to acquire points for retirement. His efforts are futile since he cannot complete the prescribed minimum of 20 years of active service prior to reaching age 60. He can, however, continue in the Active Reserve providing he remains physically qualified, by earning 30 credit hours per calendar year.

Chart 5

COMPUTATION OF NON-DISABILITY RETIREMENT PAY

Lt Colonel "C" was originally appointed from OCS on 25 June 1942, having enlisted on 5 January 1942 at the age of 24 years. He completed 5 years of war service, $4\frac{1}{2}$ years as an officer and 6 months as an enlisted man. He joined the postwar Reserve at time of separation, i.e., reversion to inactive status, but because of a temporary physical disability was in the Inactive Reserve from 10 July 1948 until 29 June 1949. Between 29 June 1949 and 30 June 1972, upon which latter date he became inactive (joined Honorary Reserve) for physical reasons, he completed an additional 5 years of active duty training. Otherwise he earned his minimum of 50 points per year for inactive service. Base and longevity pay of a Lt Colonel with 30 years service is \$550.00.

5 years war service plus 5 years active duty training equals 10 years active service X $2\frac{1}{2}\%$ (base percentage per year) equals 25%.

$30\frac{1}{2}$ years total service minus 10 years active service equals $20\frac{1}{2}$ years of inactive service.

$20\frac{1}{2}$ years X 50 points inactive service credit per year (minimum) equals 1025 total points for inactive service.

1025 total inactive points divided by 360 arbitrary maximum allowable points per year equals 2.8 years of inactive service credit.

2.8 years X $2\frac{1}{2}\%$ per year equals 7% to be credited for total inactive service.

25% for active service plus 7% for inactive service equals 32% for all service.

32% of \$550.00 equals \$176.00 per month retirement pay due at age 60.

Chart 6

INTELLIGENCE AND THE MEDICAL OFFICER

LIEUTENANT COLONEL CORNELIUS A. LICHIRIE, GSC

Executive Officer, G-2 Section, Third Army

General Armstrong, Fellow officers and distinguished guests:

It is a distinct honor and pleasure to be with you. From my personal knowledge and experience, I can say that the Army is fully cognizant of the grand work you have done and how much we rely upon you in the future. I personally cannot do justice to the fine work my battalion surgeons and the aid-men did during the war. A measure of what I felt is indicated by the fact that the first Silver Star and the first five bronze stars awarded in my Battalion went to the Medical Department. I know that this fine work was true at all medical echelons.

When we leave the field of pure medical functions and tie it in with Intelligence, we can find evidence for a need of improvement. Fundamentally, the basic point is that we are all part of the Army Team, and if we realize what the other man is doing and what he has to do, and if he understands your job and what you have to do, every echelon can benefit.

I should like to take a moment to explain the purpose of intelligence and some of the agencies it has at its disposal. Its purpose, primarily, is to dispel the fog of war for the commanders. Above all else, the commanders must be helped so that they do not have to fight blind-folded. To prevent that one thing, fighting blind-folded, a vast combat intelligence system is set up.

Each fighting division has a reconnaissance unit, be it a company or a battalion. Within the fighting units themselves, an Intelligence Section is part of the regiment and battalion to coordinate the collection and dissemination of intelligence information. Distributed within the divisions are IPW Teams for the purpose of interrogating prisoners of war. Working closely with the IPW Team at division level, we find other intelligence agencies such as the Order of Battle Team, Photo Interpreter Team and the Translator and Interpreter Team.

The Order of Battle Team collects and maintains information on the organization, disposition, strength and location of enemy forces. The Photo Interpreter Team secures information from aerial photographs while the Translator and Interpreter Team is concerned with captured maps, field orders and other documents that reveal the enemy to us. All these teams function under the G-2 of a division.

These teams are also found at Corps, Army, and Theatre levels where they continue and expand the work begun at divisional level. Their collection of information is more detailed and deliberate.

At Army and Theatre levels we find other specialized teams such as Engineer Intelligence, Medical Intelligence and other branch Intelligence teams concerned primarily with the equipment, tactics and techniques of their particular branch. To furnish all available data on factors that may effect any operation or future plan, the Intelligence Division of the Department of the Army maintains a Strategic Intelligence Section whose function is to conduct continuing studies of countries and sections of the world. At this level the work is closely coordinated with other technical staffs. The climatic and Medical aspects of any operations received much emphasis. The results of such work is Intelligence-Intelligence which enables the commanders to use the means at their disposal to best meet the situations that will confront them.

Major General Bliss, The Surgeon General, has stated that one of the major aspects of the mission of the Medical Department is the work of prevention. Colonel Gordon, of the Medical Corps, in his article, "The Strategic and Tactical Influence of Disease in World War II", re-inforce this statement and shows how intelligence helped us meet problems which might have been disastrous if not anticipated.

"The epidemic of typhus fever that eventually involved American troops in Germany in 1945 constitutes an outstanding example of the strategic influence of disease in field operations. The epidemic was evident well in advance of the time that it became an immediate military problem, with the result that plans and an organization for meeting the situation got under way as early as 1941.

The probable situation at different times in the projected course of military operations was analyzed in detail. Arrangements for a cordon sanitaire along the Rhine River with tentative ports of entry were set up three years before an American soldier crossed that river. A significant change in procedure was incorporated in the plan in 1944 when the value of the newly developed insecticide DDT became evident. Unit responsibility for control measures in the particular area of influence was recognized as the fundamental approach. Provision was made at Theatre and Army echelons for teams trained in diagnostic and insect control procedures to furnish the necessary aid and consultation to unit surgeons. The proper administration of the cordon sanitaire was made the responsibility of the Army Group.

Typhus was found in Germany in March of 1945 as anticipated, in all a total of 17,000 cases. The number of secondary infections was surprisingly few. The out-break was eliminated within three months. During

this time only three American soldiers contracted the disease, two of them physicians engaged in typhus control.

Consider how valuable the results of this planning turned out. Because intelligence pointed up the problem of Typhus, the problem could be met and conquered. Contrast these results with 2,000,000 typhus deaths in Russia during World War I, and 1500,000 Typhus deaths in Serbia during the six month period in 1915. Intelligence, proper planning and decisive action paid off.

A study of the Intelligence planning for the Pacific Theatre will show that the problem of Malaria was recognized by the Medical and the Strategic Intelligence Study Groups. The story here, however, points out the lesson that Intelligence is of value only if it is acted upon. "Malaria" - I quote from Colonel Gordon's article: "Malaria in the Southwest Pacific constituted a strategic problem. Advance planning had likewise been concerned with the provisions of malaria control supplies, the development of method, and the training of personnel to combat this communicable disease. The early years of operations in that theatre were attended with shipping difficulties. It was a function of theatre authority to allot tonnage and a choice had to be made among the various classes of supplies assembled at ports of debarkation. The choice was made with the result that troops taking part in the early campaign in the Solomons and in New Guinea were without sufficient malaria control supplies and lacked specially trained control organizations.

The casualties from malaria were high. In the South Pacific Area, the attack rate for malaria reached 696 per thousand per annum in August of 1943. In the Southwest Pacific Theatre, the attack rate early that year exceeded 400. Four American and two Australian divisions were incapacitated for periods of more than six months. At one time, more than 30 per cent of available beds in the Southwest Pacific Theatre were occupied by malaria patients.

Subsequently the situation improved greatly. Survey and control units were assigned to field control, the necessary supplies were shipped, and strong emphasis was placed by command on the improvement of malaria discipline among troops. The morbidity rate for malaria declined steadily during the latter half of 1943, and in 1944, so that by 1945 the attack rate was less than 40 cases per thousand troop strength per annum in the better area. The extent of the problem is indicated by the loss of 800,000 man days from malaria in the Southwest Pacific Theatre in 1943, this constituting a fourth of the losses from all disease. The proportion was reduced to 5 per cent in 1944; and the old ratio of greater losses from disease than from battle casualties again returned to the more favorable circumstances which characterize modern warfare. The strategic problem was met, but after avoidable losses."

Colonel Gordon, in the same article, illustrates the beneficial results which were obtained as a result of recognizing a problem and at the same time utilizing all our available methods toward meeting this problem successfully. I refer to tetanus, which has always been a factor on the battle field in previous wars. "In the European Theatre of Operations, where battle casualties were more numerous than in any other theatre, both the mortality and the morbidity rates for tetanus were less than among troops stationed in continental United States, thousands of miles from a field of Battle. The almost unbelievably good results, a single case and a single death during the whole period of operations in Europe, are attributable to the remarkable effectiveness of active immunization brought about by tetanus toxoid. No soldier left America without immunization and the greater rates in the Zone of the Interior, of themselves inconsequential, were related to tetanus infection among recruits before immunization had been accomplished."

The foregoing examples are but a few where Medical Intelligence at higher levels has been of the utmost importance.

In the lower echelons, opportunities will frequently arise for Intelligence conscious medical officers to help their own units. Wounded enemy prisoners still in possession of maps and documents which may be of tremendous value will often be sent to a Clearing Station. When this happens, remember the Intelligence Section of your Battalion or Regiment, will be delighted to send over and get them. Anyone of you may be the first to get a tip of tremendous importance. We may imagine an individual going through your Station who shows symptoms of having been exposed to radio-active material. Certainly that individual would deserve being questioned from the Intelligence view-point. Your S-2 or your G-2 should be notified so that this man can be interrogated and fully exploited.

Not only the wounded enemy are a source of information, but our own wounded who have been picked up on the battle field often have information which they have not been able to get back to their units. The answer to such a simple question such as "Do you have anything that you want to tell your Commander?", may bring out the fact that this soldier has not yet been able to tell his unit what he has learned while out on patrol. He may have information which is of tremendous value if transmitted promptly.

Many medical officers speak foreign languages. A hint from a captured enemy medical man that his hospital is evacuating patients and is preparing for a displacement to the rear might be the indication of a general retirement on the part of the enemy. Conversely, information that a hospital is displacing forward and that other hospitals are being brought into the immediate area, might be the tip-off of a coming offensive. Thus, an alert medical officer or Corps man who has

been taught that he is part of a team and who realizes that Intelligence is the result of piecing together of hundreds of small items of information may supply the vital key to enemy capabilities or enemy plans.

Any of you might be told by an enemy medical officer of an epidemic in an area to our front which they themselves have been fighting. This might be the tip-off for the need of extra supplies and strict precautionary measures on the part of all Commanders in our Army. The results might well be that Divisions will remain effective because they have been promptly warned and proper precautions could be taken in time.

We must be alert and remember that we can always learn from the enemy. As we take over a Hospital or a dump of enemy medical material, the medical officer should consider himself the start of his branch technical Intelligence teams. A glance at the instruments and equipment which the enemy has been using may indicate some that are strange or are new. A few questions may indicate their use and a report should be forwarded to higher Headquarters so that this equipment can be properly evaluated. We might find new drugs which may give us a line on a new field of research. True, at the moment, these drugs are not everything that we might desire. If placed in our research labs, however, they may open a new field from which we may get end products that are just what we are looking for and that will benefit all of us. Along with the reporting of new drugs and new equipment ought to go the report of enemy dumps of medical equipment. While not strictly an Intelligence matter, nevertheless, it is information which your higher Headquarters should know. The equipment and supplies at the dump may be just what they need at the Prisoners of War Hospitals that have been set up in the rear. By making that available, we conserve our own supplies that have been brought to the theatre for our own military personnel.

I have been speaking of what the medical officer can do. Please remember that the Intelligence Section is always there to serve you.

While the Medical Sections are on the automatic distribution for maps, the medical officer should also remember that he can ask for specific information to help settle a problem. Let us suppose that information has come to you stating that a Hospital exists in a small town ten miles behind the enemy front. You desire to know more of this Hospital. The G-2 of your Division or of your Corps can instruct the IPW Teams to find out what they know concerning this Hospital. An air photograph of this Hospital can also be called for through the Intelligence channels so that you can gather, from the picture, an idea of the hospital's capacity, its condition and the road net leading to it. Information such as this can then help you in your plans for displacement forward.

All G-2's, from the Division up, have facts and an analysis of the region in which they are fighting. They can tell you the anticipated seasonal rain-fall, the water table, the climatic conditions and the local endemic diseases. This information can help you plan to take care of a varying work load. As you know, where we have wet, cold weather trench foot is bound to come to the front. You can help the Commander at your level by calling for strict precautionary measures so that the effect is minimized. Where endemic diseases are latent, or epidemics exist in the civilian population, you can be of the greatest help as a result of this Intelligence to take the proper precautionary measures. Through this action, you will reduce the number of ineffectives due to disease. Just as we have learned that Military Intelligence is of no value unless it is disseminated, it is essential to remember that Medical Intelligence should get down to the lowest level so that information which has been gathered is available to those who can properly use it.

I can conclude with only one thought - to emphasize that all of us are part of the fighting team. The Medical Officer, if he knows the other jobs and missions and problems of the Army, can increase his usefulness. We, in Intelligence, should know more about what you want so that we can help you in every possible way to the benefit of the whole fighting team.

CURRENT STATUS OF ORC MEDICAL UNITS OF THE THIRD ARMY

LIEUTENANT COLONEL L. F. KELLER, GSC

Chief, ORC Branch, Civilian Components Operations and Training
Division, G-3 Section, Headquarters Third Army

My purpose here today is to give you a short summary of the status of Medical units of the ORC within Third Army Area.

To begin with let us examine the allocation of the ORC Medical units given to Third Army by the 30 April 1948 ORC Mobilization Troop Basis. For the benefit of those who may not understand, the term "allocation" means the units listed by number and type which the Department of the Army desires be activated, organized and trained by the Army Commander.

Including one affiliated unit, the Troop Basis allocated to Third Army 300 Medical units of all sizes and natures. This figure is inclusive of Medical Detachments and Companies that are component parts of larger tactical units such as Infantry Regiments and Field Artillery Battalions.

To date 71% of all the allocated units other than Medical Companies and Detachments of Tactical Units, have been activated and from the surface, one would conclude that such a percentage of activations within a years time is satisfactory but there is more to this problem than appears on the surface. In other words, judging from the units by the 71% of activations is like judging a book by the cover; hence, I intend to show you the contents of the pages in this case, that you may all be informed of the existent short-comings of ORC Medical Units.

To break down the activated units and show their internal situation, we must look at the number of personnel assigned as compared with the number that should be assigned if every unit concerned were at its ultimate class. The 134 units which comprise the 71% figure, have 17% of their officers assigned or 804 of the required 2,405; they have 9% of their enlisted strength assigned or 842 of their required 9,225. These figures, gentlemen, do not include the small Medical units of tactical organizations of which there are 120 on the Troop Basis. These units, however, present a none too optimistic picture in that only 40% of them have been activated and have only 25% of their necessary personnel assigned.

To see the Third Army ORC Medical situation in its true light, one must review, in addition to the requirements for Medical personnel, the available Reserve Medical personnel for assignment to units.

Currently, the available Medical Reservists in the seven states comprising Third Army Area, are as follows:

- (1) 1,316 Medical Officers
- (2) 431 Dental Officers
- (3) 435 Nurses
- (4) 43 Women Medical Specialists
- (5) 121 Veterinarians
- (6) 1,047 Medical Service Corps Officers
- (7) 4,840 Medical enlisted men
- (8) 29 Medical Service Corps enlisted men

This gives us a total of 2,915 officers (male), 510 female officers and 4,895 enlisted men. In other words, gentlemen, the ORC Medical situation in the Third Army Area is not as far along the road toward success as it appears it could be under current conditions.

Having determined what the conditions of the Reserve Medical units are, the next logical step is to determine the cause or causes of such and what has been done towards bettering the situation and bringing the units concerned up to their proper level.

Frankly, we do not know all of the causes which have to date, retarded the medical portion of the ORC program but we believe some of the more pertinent reasons for the drawback are: inability of many doctors to participate in the Reserve program owing to their practice and civilian pursuits; total lack of interest on the part of some Medical Reservist personnel; the lack of concentrations of sufficient Medical personnel within geographic locations which makes it next to impossible to form Medical Reserve units and provide them with the necessary officers from the locale concerned; the lack of position vacancies for field grade officers in Medical units of the Troop Basis; lack of ample armory space and facilities for unit meetings and training; and finally, the lack of opportunities for advancement in grade owing to the lack of position vacancies against which promotions may be made.

Now as to what we can do or have done about these matters let me present the following:

In the matter of the inability of doctors to participate in the Reserve program owing to the lack of time away from their practices,

there is little we can do. You are probably all familiar with the various ways a doctor in this situation may be able to remain active in the Reserve picture by earning points toward retirement and his active Reserve status by performing various duties such as giving physical examinations, by serving on various types of boards for Reservists, and extension courses.

As to the lack of interest on the part of individual Reservists, it has been noted that since the institution of the inactive duty pay and retirement provisions, there has been a marked increase in the interest. It is hoped that this trend will continue and that the Reserve program will grow and prosper.

There is little which can be done in regard to the lack of sufficient Medical personnel in a particular area to support a Reserve unit; however, this has been somewhat overcome by giving personnel in such situations, mobilization assignments to active Reserve units in other nearby locations and permitting them to earn inactive duty pay and points toward retirement by training with other units than their own and by performing other tasks for which such credit is given and for which they can find the necessary time.

The lack of position vacancies for field grades in troop basis units against which mobilization assignments can be made is being offset to some degree by mobilization assignments to Department of the Army controlled units. Unfortunately, there have been very few assignments of this nature for Medical personnel; however, we are hopeful for more assignments of this nature in the future.

The degree of success of any endeavor of the Army is directly proportionate to the funds available for the project undertaken and unfortunately, the Congressional appropriations of funds for the Reserve program of the Army, have left much to be desired. The Army Commander is acutely aware of the lack of ample Armory space and facilities for the conduct of training of Reserve units within the bounds of the means or funds made available to him; he has done all possible to eliminate the inadequate space and facilities for Reservists. We are ever hopeful of obtaining more funds that more and better facilities may be provided for the Reservists of the Third Army Area; the G-4 representative will give you further information on this matter in a few minutes.

The lack of opportunities for advancement or promotions is another problem which cannot be readily solved. Unfortunately or fortunately as the case may be, many Reservists were tendered what are in the common "slanguage" of the day, termed "fluff" promotions or a raise in grade upon relief from extended active duty; today, these promotions have acted to create surpluses in grades and especially in the field grades. To date, the only method open to the Army Commander to promote

Reservists not members of mobilization troop basis units, is that of promoting against the percentage of Reservists in all grades not assigned to units. In short, this system is one which establishes the percentage of unassigned officers in each army or service that may be in each rank from lieutenant to colonel. 60.6% may be lieutenants, 25.2% may be captains, 9% majors, 3.8% lieutenant colonels, and 1.4% colonels; when the number of unassigned medical colonels falls below 1.4% of the overall Reserve medical officer strength of the Army Area, promotions may be made to bring the strength up to the 1.4% figure.

Ladies and gentlemen, you have heard the report of the status of Third Army's Reserve Medical units and the steps that have been taken to remedy all of the ills. We urgently solicit your aid and assistance in bettering the Medical Reserve picture by any lawful means you may be able to utilize. If you can inform us of further existent deterrents to the Reserve Medical program and of possible methods for their elimination, please do so by forwarding such information to Third Army through your unit instructors.

I thank you.

LOGISTICAL SUPPORT OF THE ORC

LIEUTENANT COLONEL JAMES H. MAHONEY, GSC

Chief, Planning and Miscellaneous Branch, Supply Division
G-4 Section, Headquarters Third Army

One hundred and twenty-eight Medical units of all types have thus far been activated and assigned within the Third Army Area. Of this group, 46 units have at least a part of their T/A equipment. These units are scheduled for ultimate Class A, and are, incidentally, elements of the 18 - 25 Division Striking Force which will be initially employed by the United States in the event such action should be necessary.

The mechanics of effecting the supply of these units, and of all ORC units in the Army Area, are handled by an ORC Sub-branch in the Supply Division of the G-4 Section, Headquarters Third Army. An ORC property officer, who heads the sub-branch, is the accountable officer for all ORC property. He has, at the present time, some 2200 separate ORC unit accounts and will ultimately have 2398, since this figure represents the total number of T/O&E units activated or scheduled for activation.

When general orders activating ORC units are published by Headquarters Third Army, the ORC property officer prepares initial requisitions for equipment authorized the units under appropriate tables of allowances. He forwards these requisitions to the units concerned, through the commanding officer of the military district. Unit commanders review these requisitions, and eliminate items not required for home training. They then sign the requisitions and return them to the ORC supply officer, through the military district commander, who adds a certificate relative to the adequacy or inadequacy of storage space and safeguarding facilities. The ORC property officer forwards the requisitions to the depot and shipment is made direct to units.

Requisitions for replenishment and subsequent initial issues are prepared by the ORC unit commander concerned and processed in a normal manner. Except for initial issue to newly activated units and for special requirements action is not again initiated by Army Headquarters.

This procedure is prescribed by Circular 81, WD, 1947, "Supply of Equipment to the Organized Reserve Corps." Under this circular the office of the ORC Property Officer is part of the Army Headquarters. His duties and responsibilities are comparable to those of a supply officer of a post, camp or station. He is responsible for the accom-

plishment of requisitioning and accounting for all supplies and equipment issued to ORC units in the Army area, to include both expendable and non-expendable supplies and equipment.

This set-up is undergoing revision by the Department of the Army; and a new publication on the subject of the Supply of the ORC is expected at an early date. While the exact provisions of the revised circular are unknown; on the basis of studies and recommendations which have been required by the Department of the Army, it is believed that it will provide for the decentralization of ORC supply responsibility to military district level, in which event the duties now performed by the ORC property officer at Army Headquarters will devolve upon the military district commanders located in the seven Southeastern States, comprising the Third Army Area.

This will result in closer, more personal, and efficient supervision than is now possible, will facilitate lateral supply between units; should generally expedite ORC supply; and is in line with the Army's policy of decentralization. However, it is anticipated that this system will be more expensive than that now in effect since it will mean seven separate ORC Property Offices, rather than one.

Limited clothing stock have, however, made it necessary for The Adjutant General to direct that clothing requisitions for ORC units be restricted as follows:

a. Enlisted reservists scheduled to attend summer camps or other short tours of active duty are authorized the issue of either cotton or wool clothing, or both, as determined by climatic conditions.

b. Issue of wool clothing to enlisted reservists not scheduled to attend summer camps or short tours of active duty, is restricted to enlisted reservists of the 18 Division Striking Force units.

We have two major problems in attempting to furnish support to the ORC. These are lack of funds for the procurement of T/A equipment, something over which we have no control, and lack of storage space and safeguarding facilities for such equipment as is otherwise available for issue to ORC units. To solve these problems costs money, and plenty of it.

As an example of the shortage of funds, there are approximately 60 vehicles, light sedans and jeeps, which are authorized senior Army instructors in the Third Army Area. This is fine, but the vehicles are available only on a reimbursable basis, and funds are not presently available to the ORC for their purchase. The result is that this lack of adequate transportation is materially retarding instruction of ORC personnel, particularly in those cases in which units are widely separated or located in sparsely populated areas. Other badly needed

equipment is not available for issue to ORC units for the same reason - lack of ORC funds.

Again, a continuing lack of storage space and safeguarding facilities retards the issue of available equipment to ORC units, and, of course, effects training. This condition is not only confined to items such as small arms, or rocket launchers; or to heavy equipment, such as light and medium tanks; but also concerns storage space for individual clothing and equipment.

Many expedients have been resorted to resolve these difficulties, but they have not been uniformly effective, and the condition remains to be corrected properly. We cannot make issues when there are no facilities for storage of unit property nor for its safekeeping. On the other hand, no unit commander or supply officer in his right mind wants to assume responsibility for property under these conditions.

At present, some units do have property in their own storage facilities, others share facilities with several other units, at military district Headquarters or elsewhere, and in these instances we have already encountered some difficulty resulting from the loss of identity of unit property because it has not been completely segregated or marked as belonging to a specific unit.

Large warehouses have also been leased, notably in Tennessee, and necessary repairs, alterations, and rehabilitation effected to provide individual unit store rooms and consolidated storage for the heavy equipment of as many as thirty units in one building. Rifle ranges and other features have been installed, and here very real progress has been made in the support of the ORC units concerned.

However, this sort of action has not always been possible and is practical only in or near large population centers. The warehouses or other buildings or portions of buildings that have been made available are temporary expedients.

The matter of adequate and suitable facilities for the ORC is one which is of interest to you as it is to all the arms and services of the Reserve. This continues to be a very real and difficult problem to Third Army, and to the Department of the Army. It must be solved satisfactorily and soon.

Where a facility exists which would be suitable after some renovation and repair it would appear to be a relatively simple matter to enter into a lease for the property and expend the necessary funds. However, existing law and regulations make this a somewhat involved procedure.

The Division Engineer, South Atlantic Division, is the Third Army's agent. He is not authorized to negotiate long term leases,

being limited to one year, with provisions for renewals for a total of five years, and as a result he must sometimes pay high rentals in order to acquire a suitable facility.

There is also a limitation placed upon the amount which can be spent for rehabilitation of the property - 25 per cent of the annual rental - and this very often precludes obtaining space in most desirable locations.

These two considerations - inability to negotiate long-term leases, and excessive rehabilitation costs - have more than once resulted in the loss of suitable space. Frequently an owner will himself agree to perform the necessary alterations, provided he can amortize the expenditure within one year or over a period of years, but here again the short term proposal will involve a higher rental and under existing limitations cannot be justified, and the longer term arrangement is prohibited.

So far as the actual procurement of space is concerned, the procedure is for the using organization to forward a request to Third Army indicating the amount and type of space required, with a full justification of its necessity. If a particular space is known to be available, a full description including the rental rate is required. Even though suitable space is thus available the Division Engineer is nevertheless required, in nearly all cases, to advertise, in local publications for a period of 10 days for the type of space required.

At the end of this time replies are reviewed and investigated with the local ORC representatives. The most suitable space from the standpoints of rental, location, and amount of alteration necessary is then tentatively selected, and negotiations begun. At the same time a request for funds for alteration is made to Headquarters Third Army, and if approved, work can then start to make the space suitable for use, provided negotiations have been satisfactorily completed.

This system leaves quite a bit to be desired. The situation would be alleviated by an appropriation of funds for the construction of armories for the ORC. Studies and reports on this subject have been made and forwarded to the Department of the Army. Studies have also been in progress since September, 1948, on the joint use with the ORC of National Guard and Naval Reserve Armories. National Defense Reserve Facilities Boards have been set up in each State, with Army, Navy and Air Force members; the Army representatives being appointed on the recommendation of military district commanders. The Southeast Area Sub-committee, Committee on Facilities and Services, Munitions Board, has also been active on this subject.

At present a National Defense Facilities Act is pending before Congress. Planning of temporary type armories has been suspended pending the outcome of this proposed legislation, and the survey being conducted by the National Defense Reserve Facilities Boards. In any event, National Military Establishment planning, as well as pending legislation, contemplate considerable construction, which we hope will be of a permanent type.

While this presentation has not been specifically directed at you as Medical officers, it does have application to you as Reserve Officers. I hope that it will serve to explain some of the problems the Army is up against in the support of the ORC; to indicate that the Army is aware of the difficulties under which you are trying to function; that these difficulties are appreciated, and that an effort is being made to smooth the road for you.

MEDICAL DEPARTMENT PROCUREMENT PROGRAM

COLONEL PAUL I. ROBINSON, MEDICAL CORPS

DIRECTOR, PERSONNEL DIVISION, OFFICE OF THE SURGEON GENERAL

DEPARTMENT OF THE ARMY

The primary interest of the Personnel Division of The Surgeon General's Office is the provision of sufficient professional personnel to maintain a high standard of medical care to the troops of the Army and Air Force. My remarks today will reflect the situation as it will be within the next few months. But first, for clear understanding, it is appropriate to look briefly into those elements, both in the military service and in the medical profession, which affect the problem now and which have acted to bring on the present situation.

When mobilization began, the Army Medical Department had slightly more than 1,200 doctors of medicine. Many of these were near retirement age. The Medical Department had its share of losses in battle during the war. Because there was no way in which to predetermine the size of the postwar military establishment, and for other reasons, the Department of the Army decided that Regular Army commissions would not be tendered during the war years. You all know of the rapidity with which demobilization took place after the cessation of hostilities. Not many medical officers paused to consider a career in the Regular Army at that time. Because of the established strengths of the Army and Air Force, the authorization for Regular Army medical officers was raised from 1,200 to 3,000. The Integration Program, which was followed over the years of 1946 and 1947, produced only 374 doctors of medicine and 234 doctors of dentistry. These gains barely kept pace with the losses which were largely due to retirement. This Integration Program allowed for the transfer of Army of the United States officers to the regular establishment under certain conditions. I might add that with the exception of the Medical and Dental Corps, the program was reasonably successful for all other branches of the military service.

Prior to the War, the regular component of the medical establishment had been rendering medical care to the Army, administering preventive medicine practices among all troops, performing medical and field research, and preparing medical plans for the future. Training of medical personnel had been largely directed along the lines of field service. Professional training was ordinarily given "on the job." A few professional specialists were developed. Most of the medical officers compared favorably with the general practitioners of civilian life, but all had had some training in field medicine. Virtually the entire Regular Corps of officers remained so assigned for the duration of the war -- almost six years without direct contact with patients.

In the meantime, a great deal was happening in civilian medicine. Sixty-odd thousand physicians donned uniform and served with the Armed Forces. Economic conditions in the United States were at an all-time peak, with physicians who remained at home as busy as they could possibly be, and their practices extremely lucrative. These events imbued considerable dissatisfaction among many of those in the service although, even then, most of them would not have changed places with those who stayed home.

Another significant change in the order of medicine, which had begun before the war but which progressed at great rapidity during and immediately after the war, was the urge for specialization. In furtherance of this movement, some twenty-one specialty boards have been established and criteria for certification requiring from two to seven years of specialty training of direct and indirect types have been specified. Better physicians are created and better medical care thus is being rendered to patients. There are certain other attractions to specialty practice. Hours can be regulated and fees can be higher. On the other hand, responsibility cannot be dodged or shifted -- it has to be assumed by the specialist.

The specialist movement has progressed to the point where every young medical graduate actually feels inadequate to practice medicine unless he has had postgraduate training sufficient to equip him for certification by a specialty board. This concept is also shared by every Army physician. Only a handful of specialists existed among the Regular Army officers of the Medical Department at the close of the war. Our calculated requirements for specialists are thirty percent of the required number of physicians. Our physicians had not been in contact with patients for six long years, yet they had to return to patient-care duties. Obviously, by all standards, they had to be retrained and their training had to equip them to meet their civilian counterparts on an equal basis. The Army had no hospitals which were approved for residency training. The Army had no schools for undergraduate training. It was completely dependent upon civilian medical schools for its physicians; it had to establish postgraduate training for the required number of specialists.

With the help of civilian physicians acting as permanent consultants to The Surgeon General, a carefully supervised program was established in a number of Army hospitals. At the present time, five of the teaching hospitals, of which Oliver General Hospital is one, are performing teaching functions equal to those of the best teaching hospitals of the nation. Valley Forge General Hospital, in Pennsylvania, and Tripler General Hospital, in Honolulu, will be added to the list this summer. The teaching program has been in effect less than three

years, yet at the present time the Army Medical Department has trained 140 doctors to the point that they have been certified by American specialty boards. Some twelve hundred officers will be in specialized training as interns and residents this July; all residents of these officers hold Regular Army commissions. Approximately one thousand of these will have been procured since the end of the unsuccessful Integration Program.

It is clear, I believe, that the predominant reason for the disinterest in military medical practice which has been manifest among young physicians was the lack of adequate training facilities. It has been necessary to establish 425 medical officers in residencies in civilian hospitals throughout the country, where they will remain until their training is completed. The reason for this is to supplement the Army Training Program in order to produce the required number of specialists in the shortest possible time.

Since the cessation of hostilities, medical service has been largely rendered by young officers who were graduated from the medical schools of the nation during the war. Their education was received under government auspices or, as medical students, they were deferred from service during the war. Since 1945 some 10,000 have served for two years, which is the minimum period stipulated by Public Law 239 of the 79th Congress. The extent of graduate training of the majority of these officers, before they were brought into the service, had been limited to internship. They have been anxious to finish their two years' service and return to hospitals in order to enter or complete their residency training. Some of them have entered the Regular Army and are now participants of the Army Training Program.

One would expect, I believe, that of the 10,000 medical officers, more than a few hundred would be interested in the Army as a career. However, there are many reasons why this has not been so. First, a training program did not at first exist, a factor that was demanded by all. Second, many of our Army officers did not accept these young officers. This applies both to medical officers and officers of the line. In many instances the young officers themselves felt they were being penalized because they had done what their government wanted them to do during the war; that is, they pursued a medical education. For this reason they did not feel that they should be required to serve on active duty in recompense for that training. In other words, they have considered their service with the Armed Forces as more or less a penalty. This feeling is too bad; nevertheless, it is true and irrevocable. Third, housing has been inadequate in most Army stations. Housing, however, has been a National problem and has not been limited to Army personnel. Fourth, many have considered the pay unattractive. Fifth, many believe that too much administrative work is done by medical officers. Much has been done to transfer such duties to the

new Medical Service Corps and there are indications that not too much further progress can be made along these lines.

The acute shortage of medical officers which faces us in the very near future results from the fact that of the 2,550 young officers who are now on duty, 2,000 will have completed two years of service and will be separated from the Army before December 31 of this year. Thirteen hundred will be separated before July 1st. Procurement efforts, therefore, have been directed toward securing officers as their replacements. Obviously, those in the Training Program cannot be considered as replacements, nor does adding others to the Training Program solve the problem. The Army requires young physicians to perform routine medical duties in various posts, camps, and stations throughout the nation and in its overseas occupation zones. Specialists are needed, of course, but the acute need is for officers to perform out-patient care, conduct examinations, and to carry out other duties which are largely performed in civilian life by interns and residents. It is obvious that all out-patient care, physical examinations, and ward duties cannot be concentrated in the few teaching hospitals utilized by the Army.

Two procurement efforts have been inaugurated on a large scale in the past few months in an endeavor to obtain volunteer officers. The first effort was made by the American Medical Association, when it addressed letters to 7,600 physicians less than twenty-six years of age. In other words, the men approached were those who fell within the eligibility classification of the present Selective Service Act. This program was launched on December 20, 1948, but soon thereafter the Secretary of Defense announced that he would not utilize the Selective Service System to bring individuals into the service for several months. Obviously, it then became useless to place any more pressure on these young physicians. Actually, the program produced 21 applications for active duty with the Army.

The second program was inaugurated by the Secretary of Defense on the 25th of February this year. It was directed to the more than eight thousand young physicians and dentists who received part of their medical education during the war under the Army Specialized Training Program or the Navy V-12 Program, but who were discharged from the programs and from the services before their graduation. To date, the results of this program reveal that 115 have indicated a willingness to serve with the Army and Air Force. Medical Manpower Committees are being set up in the city and county medical societies all over the nation. The hospitals of the country are actually selecting young doctors to serve with the Armed Forces. The American Medical Association has indicated by editorial in the April 2 issue that teaching hospitals should take a hand in the program. This program is yet new and will be continued with all the vigor and ingenuity that we possess.

Many of you will be engaged in some phase of this program through your local society or hospital affiliations and we feel sure that it will receive your sympathetic and aggressive action.

The history of two World Wars has established the fact that in time of military emergency it is the Reserve officer upon whom a great burden of effort and sacrifice has fallen. Today, the Army Medical Department is facing an unparalleled peacetime emergency and is again turning to Reserve medical and dental officers.

Here again we want this to be purely voluntary. You are all familiar with the present provisions whereby Reserve officers may come on extended active duty for 1, 2, or 3 years. You may not be familiar with the fact that you can come on duty for as little as one month or that you can go overseas for as little as 6 months. You have not been informed of the newest plan which would permit medical and dental Reserve officers to come on duty for periods as small as one day. We hope many will be interested in serving one or more days per week in the local station nearest their homes. We know that all of our Reserve officers are interested in the Medical Service of the Army; otherwise they would not have retained their commissions. We know also that the criteria for gaining points toward retirement as currently published cause much difficulty since they do not fit the lives of practicing professional men. We hope this program will in some measure assist you in obtaining satisfactory years of credit, for then it will be mutually beneficial to us both. In order to evaluate and estimate the success of these plans, we are currently informing some 14,000 Reserve Medical officers and 6,000 Reserve dentists of our critical situation and are requesting that they indicate on a simplified questionnaire form their possible availability for duty. This information and questionnaire will be distributed by senior state instructors.

We have informally discussed these plans with several Army surgeons, hospital commanders and individual Reserve officers. You represent the first group of Reserve officers to whom we have presented the program, and we shall be most interested in your reaction.

In conclusion, I hope I have left you with the impression that we are proceeding slowly but satisfactorily with our long-range Regular Army officer procurement for the Medical Department. The professional training program and the program for transfer of administrative duties to Medical Service Corps officers are both in keeping with the highest ideals of American medical practice and will continue in the future with the idea of making medical practice in the Army truly attractive, both in peace and in war. Housing and pay are not neglected items, although I am sure all of you realize the difficulties inherent in making preferential considerations in such general matters of endeavor. In the over-all, your Medical Department is being rebuilt solidly along

lines which consider first things first. The immediate situation of the extreme shortage of medical officers is one which must be faced by all of us collectively. It must be faced with the courage necessary to save the good that has thus far been accomplished. It can successfully be met without undue sacrifice on the part of anyone by complete co-operation between the active and Reserve medical forces of our Nation.

MEDICAL DEPARTMENT RESERVE OFFICER TRAINING PROGRAM

COLONEL CHARLES K. HOLMES, MEDICAL CORPS RESERVE

Executive For Civilian Components, Office Of The Surgeon General,
Department of The Army

It is a pleasure to have a part in this gathering of Reserve Officers and it is most encouraging to us who have been striving to find the answers to our Reserve problems to see this evidence of your interest. I appreciate this opportunity to tell you what we have accomplished, to tell you how things stand at present and to tell you how we are attempting to shape the future of the Medical Department Reserve Corps.

I would like to take a few minutes first to bring out some fundamental principles underlying the Organized Reserve as I see them.

(1) The Organized Reserve was established by the National Defense Act. It is on a purely voluntary basis. This law sets up the framework for the Reserve but it cannot by itself create the thousands of individual volunteers who alone can make the Reserve a live organization. Why should a citizen volunteer? Why did you elect to remain in the Reserve? What does your Reserve Commission mean? I need not answer the first two questions -- you have the answers or you would not be here -- It is this last question, what does your reserve commission mean, that I want to discuss. Your Reserve Commission is a contract between you as a citizen and your government. Every contract has at least two parties, and each party assumes certain responsibilities toward the other. On your part you have two major responsibilities. First. You have agreed to serve in the Armed Forces on call in any National Emergency. Second. You have an obligation to devote whatever effort is necessary to meet the requirements of the position to which you are assigned. This second obligation requires that the Reservist undergo additional training and as a whole the Reserves are eager to secure this training and to advance themselves in the Reserve.

We know that your civil occupations make great demands upon your time and we have emphasized at every opportunity that the Army should not demand more from you than is compatible with your activities in civil life.

(2) The Army, on its side of the contract, also has definite

responsibilities. It met them only in part during World War II. As a result, out of 46,000 doctors on duty in July 1945, only about 15,000 elected to remain in the Reserve. 893 of these resigned during 1948. 101 have resigned since 1 January 1949. Very few former Reserve Officers have come back. Our recruits are all young officers just out of school.

Consideration of the Army's part in this contract involves some knowledge of the importance of the Reserve to the national defense.

Let me quote General Bradley, from his Army Day statement.

"We are striving to build a team of mobile divisions trained and ready for instant use in case of emergency. And, in our plans, we are relying on the rising strength of the National Guard and Reserve Corps for the broad base of any future mobilization."

That short statement defines the purpose of the Reserve.

The Army's responsibilities to you may be stated briefly.

(a) The Army should make the best possible use of your services.

(b) It must provide a suitable return for your peace time services.

(c) It must provide adequate means for your training.

(3) In order to make the best possible use of a Reserve officer the Army must know his exact qualifications.

Therefore every Medical Department officer is being reclassified. New MOS's are being assigned where indicated. This data is then sent to the Armies who will take the actions necessary to assure the Reserve Officer of a proper assignment and grade adjustment.

To avoid wastage of the Reserve officers time in long periods of inactivity for one reason or another, the echelon plan, which you have heard discussed, will be followed on M-day. This will correct one of the most serious complaints made by Reservists of their service in World War II.

The Surgeon General has recently announced two policies which will correct two more criticisms still prominent in the minds of Reserve officers.

(1) He has stated that in granting approval of the grades to which civilians will be appointed on M-day he will take into consideration the fact that many of them will have had no military experience or training.

(2) When a Reserve officer and a non Reserve officer have equal qualifications, the Surgeon General will give priority in assignment to the Reserve officer.

The Army has provided certain tangible returns for your peacetime services.

(1) Public Law 810 with its retirement provisions is concrete evidence of the Army's desire to fulfill its part of the contract with you.

(2) Inactive duty training pay is another, and while during the past year this pay was applied only to those units assigned to the 18 Division Army, it is expected that Fiscal Year 1950 will provide this training pay for all activated units.

(3) The third part of the Army's contract is to provide adequate means for your training. Let us discuss first the mechanism set up for that purpose.

The Department of the Army states the broad objectives to be gained through this training. The headquarters of the Army Field Forces, the next echelon in the chain, outlines the standard of training for each unit. This is found in the Annex Number VIII to the Training Memorandum Number 1 issued last August.

From that point on operation of the training program is the responsibility of the Armies. And from that point on the mechanism lacks sufficient personnel with which to carry out a complete program. We have now 66 MSC officers throughout the 6 Army areas assigned to Reserve activities. Sixty-six instructors to train 15,000 doctors, 5,800 dentists, 6,300 nurses, and 18,000 Vets, WMSC and MSC Reserves, a total of about 35,000 officers.

I said 66 MSC to train this number of Reserves, but their duties also include all of the administrative work, organizing units, M-day assignments and records. It has become obvious, I think, that this mechanism cannot produce the results we must have.

Much greater emphasis must be placed on the Reserve program. We must have more personnel. For nearly a year now, we have asked for a Reserve Medical Corps officer in each Army area to devote full time to Medical Reserve activities. We do not want him for the purpose of sitting behind a desk handling papers. We want him to handle all affiliated units, replacing our representatives who serve us in addition to these other duties. We want him

to be our travelling salesman contacting all professional groups, to seek opportunities to speak to non military groups as well as military groups. We cannot recruit from our own people. We want him to help the medical instructors in arranging programs, in securing the best possible speakers on both military and professional subjects. The right man in that job will have an entre to professional groups that no MSC will ever have and will be worth a dozen doctors in routing hospital assignments because he will produce them through the increased interest he will arouse in the public mind concerning the army and its needs.

(4) Now for the Training Material. One very frequent criticism is that the material is old and of no interest to the professional man. In answer to this criticism I want to point out that the training program as outlined in Annex Number VIII to Training Memorandum Number 1, Army Field Forces, is a complete three year program designed for the training of new personnel and as a guide to the standard of training to be expected of the Reserve units.

When you realize that 98 per cent of our reserves have had war time or combat experience you will readily see how difficult it is to provide material of interest to them. Most of you have lived through what the program proposes to teach. That situation will not continue indefinitely and any long range program must be based upon training the new officers coming in. We ask, therefore, that you who have seen combat help us out by sharing your experience with those who served further back. You can do that by giving lectures and by planning discussions at your unit meetings. It is true that most of us have seen a great deal of the material now on hand but if you will take the films, for instance, and instead of running them straight through, arrange to stop them at interesting points and call upon your local combat experienced officers to inject some personal experiences, their problems and solutions, the film will then not be so dry and stereotyped. We are employing just such officers to prepare outlines of their combat days with our field units. We will follow these outlines in providing film background from a huge footage of combat film which we are prepared to screen. Then we will send them out for presentation at local meetings and we hope to organize trained teams of speakers to send with them. The Medical Field Service School at Brook is working on material for each unit and also on several film projects. We are working hard to provide more and better material for you.

There is one important point in regard to training that we have made every effort to put across. That is, that since the army will use every professional specialist in his special field it

would seem appropriate to train him in his MOS. It would also seem logical that where the officer's MOS and civil occupation are identical, credit should be allowed to the Reserve officer for the effort he makes to raise his professional qualifications since that increases his value to the army. We are still hopeful of winning out.

(5) Every activity proposed for retirement credit must be justified as though it were a voucher to Finance because it involves government funds. The letter of 9 February from Army Field Forces established a rigid framework within which we must operate.

"2. References:

- a. Paragraph 4H, SR 140-60-1, DA, 28 December 1948
- b. SR 140-5-1, DA, 15 December 1948

"3. The policies of the Chief, Army Field Forces governing authorization of services to count for retirement-point credits under the provisions of reference 2a, above, are announced as follows: The services for which retirement-point credits are awarded shall:

- a. Be performed in the individual's capacity as a Reserve Officer.
- b. Demonstrably improve the individual's fitness to perform his prospective mobilization duties.
- c. Be limited to attendance at drills or to the planning, supervising, imparting, or receiving of military instruction.
- d. Require outlay of the individual's own time and effort beyond that required in the normal course of his civilian occupation.
- e. Be performed without remuneration of any kind other than U.S. Government pay as a member of the Army of the United States.
- f. Be supervised or previously approved by a unit instructor, ORC, or by higher authority; be of such nature that they are susceptible of verification and be certified by the appropriate instructor, ORC, as having been performed."

This directive prohibits credits for attendance at purely scientific meetings - it prohibits credits for post graduate study and prohibits credits to consultants who are drawing pay as a civilian.

There are many opportunities open in the combining of professional and military meetings. Your local Reserve program committee can get together with the committees of local scientific groups and arrange programs containing both professional and military subjects. There are two important points to be stressed here.

(1) The Reserve officers must take the initiative because the senior Army instructor and the unit medical instructor do not have the personnel or the time to do this. It is up to the Reserve officers themselves to build the type of program they want.

(2) The programs must be prepared in detail and submitted to the senior Army instructor. He must approve them in advance or credit cannot be allowed.

We are now seeking authority to utilize Reserve officers on short tours of active duty one day or more a week, or by the week, to do professional work in our military hospital. This should interest many of you as it will keep you in close touch with the Army and will provide another means of earning credit points.

We are also planning to hold State Reserve meetings just prior to State Medical meetings. There will be two sessions on each day unless one is a Sunday when there would be only one. The selection of speakers and subjects will be most important and should be done by your Reserve program committees working with the senior Army instructor. It may be possible to allow one credit point for each session instead of each day.

(6) (Summary) Summarizing the situation, we have accomplished some of our objectives.

a. We have a complete qualification record of every Medical Department Reserve officer.

b. Our lists are now in a current status.

c. These records assure proper assignment and grade for each Reserve officer.

d. We have given you assurance of priority in grade and assignment over non Reserve officers.

At present we are preparing new and better training material. We are striving to find ways of presenting this material in more interesting forms. We are persistent in our efforts to include more professional subjects. We are exploring every possibility to increase the activities by which Reserve officers may earn retirement points within the fixed framework set up by the Army. We are doing our best to stimulate greater interest and efforts by Reserve officers to build better and bigger local unit programs.

In attempting to shape our own future we find our greatest obstacle in the fixed idea that solutions to our Medical Department problems must be found within the rigid framework set up for the entire Reserve. We are striving to do this but we also doubt that it is possible. The present serious shortage of doctors in the Army is an indication that the medical problems require broader consideration.

We must secure more adequate representation at all staff levels. This is probably our most serious problem at this time.

In conclusion I can only say that I hope I have made it clear that we do have a definite goal toward which we are working and we shall continue in our efforts to build a Medical Department Reserve which will form our part of that team of Armed Forces upon which our national defense depends.

MEDICAL PROBLEMS IN ATOMIC WARFARE*

COLONEL JAMES P COONEY, MC

Division of Military Application,
Atomic Energy Commission

Colonel Bauchspies, ladies and gentlemen:

It is a great pleasure for me to be here with you this morning and to discuss what I believe to be a very vital and important problem involving the role of the doctor in atomic warfare. This problem is of such magnitude that it will surpass even your most vivid imagination and is one which requires a great deal of preliminary planning.

How are we to evaluate this problem? On the one hand we might assume that we may be adequately prepared for defense against such an attack, with efficient radar warning systems, underground shelters, and a well-educated public, organized and prepared to cope with this vast problem. If such a situation were true, our casualties might be only a few thousand. On the other hand we might assume another Pearl Harbor attack during the late afternoon to one of our large industrial cities. In this case our casualties may be several hundred thousand. For the purposes of planning let us consider the problem as it presented itself at Hiroshima. Let us assume that this group was in charge of the medical planning for such a catastrophe. What would our problems be?

The casualties may be divided into three categories, namely blast, burns and radiation.

Blast:

Let us consider first the casualties produced by the blast resulting from an atomic bomb. The direct blast effect resulting from the bomb at detonation at Hiroshima was rather insignificant and caused about a hundred ruptured ear drums. There were no cases of trauma to the lungs or ruptured viscera reported. The indirect effect, of course, was tremendous. The indirect effect is manifested by flying debris, masonry timbers and glass fragments resulting in thousands of casualties. Windows were broken as far away as Kure, some 20 kilometers distant. In studying the casualties statistics there were surprisingly few serious injuries such as fractured femurs, spines and skulls. I reviewed hospital reports on 625 cases admitted to one hospital and found only one fractured femur. Of course, we know that serious injuries did occur but unfortunately no effort was made to evacuate the wounded and those persons unable to walk out of the area were burned to death by fires. The failure to rescue thousands of wounded people in such a situation must not happen here. It

is our responsibility to evacuate promptly the injured in such a catastrophe and administer appropriate treatment to alleviate their suffering. The public must be given the true facts about the measures which can be taken to minimize casualties and suffering. We must not unduly frighten people to the extent that they will refuse to participate in rescue attempts for if such a state of affairs exists, thousands of wounded will be neglected and burn to death in the same manner as occurred at Hiroshima.

Burns:

With respect to burns, the casualties so produced may be divided into two categories - flash burns and flame burns. Flash burns resulted from the tremendous flash of heat released at the instant of detonation of the bomb. Burns occurred within a short space of time on the exposed surfaces of the body of individuals who were in the open out to a distance of approximately 4,000 yards. Within a thousand yards radius, clothing offered very little protection. Therefore, there were many cases in this area where the clothing actually caught fire and as a result the individual was burned to death. Outside of a thousand yards, clothing offered considerable protection against these burns. The darker shades of clothing absorbed more heat and frequently caused burning of the skin beneath, whereas the lighter shades absorbed less heat and offered more protection. Tightness of clothing is also a factor to be considered. Individuals were burned on areas where the clothing was in direct contact with the skin while loose, light-fitted garments offered some protection. Burns occurred only on the exposed surfaces of the body which were in the direct path of the flash. Burns were of all varieties -- first, second and third degree -- depending upon the distance of the individual from the center of the explosion. The effects produced by ultra-violet radiation were minimal, probably due to absorption of this radiation by the moisture in the air and due to the fact that there was a large amount of ozone generated at the time of the detonation. Ozone is a very efficient absorber of ultra-violet radiation. At Hiroshima, however some interesting skin reactions occurred as a result of ultra-violet exposure. In a prison, approximately 2200 yards from the center of the detonation, several of the prisoners received sufficient ultra-violet radiation to cause a deep walnut stain of the exposed skin. This phenomena was referred to as the "mask" of Hiroshima. This was due to an unusual stimulation of the pigment layer of the skin by the ultra-violet radiation. Other individuals approximately 2,000 yards from the detonation received such a large quantity of ultra-violet radiation that the pigment layer in the skin was completely "washed out", leaving an albino-like skin.

The flash from the bomb was of such intensity that it caused temporary blindness in some of the exposed individuals. The detonation of an atomic bomb under similar conditions such as at Hiroshima, except during the hours of darkness, would result in temporary blindness for a large percentage of the population within a few miles from the explosion. This condition

results from the loss of the visual purple of the retina of the eye following exposure to an intense source of light. Individuals so exposed will be temporarily blinded until such time as it takes for the eye to restore the visual purple. Such a condition might prove very serious for pilots in aircraft flying in the vicinity of a detonation.

Secondary fires caused by overturned stoves, ignited gas mains, and short circuits were prevalent throughout both Hiroshima and Nagasaki as a result of the detonation. The tremendous number of casualties produced by these fires emphasizes the need for an early and well planned efficient evacuation of personnel.

The problem of caring for the thousands of thermal burn cases in an atomic bombed community is a challenge to the ingenuity and resourcefulness of American medicine. For example, the three or four hundred cases of burns resulting from the Coccoanut Grove fire in Boston, which is one of the leading medical centers of the world, taxed their medical facilities to capacity. It is important, therefore, that we consider seriously this question: Are we prepared to evacuate and treat several thousand cases of thermal burns resulting from an atomic explosion? It is clear that burns require prompt treatment in order to alleviate the suffering and prevent infection. If the burns become infected, the difficulty in treatment becomes greatly magnified and the end result is usually poor. In Hiroshima thousands of these thermal burn cases became infected and finally healed with large keloid formations and contractual deformities. We must not allow such results to happen here. It is essential that serious consideration be given to appropriate procedures for the mass treatment of thermal burns.

Associated with this plan for mass treatment, provision must be made for adequate medical supplies and personnel to support the undertaking. In view of the magnitude of any plan for the mass treatment of burns, considerable time will be required to work out all aspects of the problem. The photographs of casualties at Hiroshima which have appeared in periodicals and newspapers are cases of thermal burns and not the results of ionizing radiation. It is the thermal burns which must be treated promptly and which will require the full attention of physicians. In order to treat these burn cases, prompt evacuation of the wounded is the paramount task.

Radiation Sickness:

Ionizing radiation is the additional hazard which makes the atom bomb different from the conventional bomb. The estimated deaths caused by ionizing radiation were approximately 15% of the total. It is true that many of the individuals who were killed by blast and burns also had lethal doses of ionizing radiation. However, 85% of the people who died at Hiroshima would have died if no ionizing radiation were present. Let us not underestimate nor attempt to debunk the radiation hazard. The deaths from ionizing radiation at Hiroshima alone amounted to 9,000 people. However, there has been too much emphasis on the ionizing radiation effects

in connection with the casualties produced and too little emphasis on the frightful number of individuals who died as a result of the blast and burns. The emphasis which has been placed on the ionizing radiation from the bomb has confused and frightened people to such an extent that many believe that it will be dangerous to enter a bombed community and rescue the wounded. Many people think of the atomic bomb only in terms of its ionizing radiation effects. This is an unfortunate and erroneous concept. We cannot emphasize too strongly that the initial problem is the evacuation and treatment of the blast and burn casualties. Bear in mind that after the detonation of an atomic bomb, such as at Hiroshima and Nagasaki, it is perfectly safe to enter the area and rescue the wounded without fear of exposure from the "residual" radiation. The facts to support this contention will become apparent as we discuss more fully what happens at and after the detonation of an atomic bomb.

Radiation Effects:

In order to understand the radiological hazards associated with the atomic bomb, it would be helpful if we could analyze first the physical facts about ionizing radiation. (See Figure 1) So long as there is a definite ratio between the number of protons and neutrons in the nuclei, the atom is stable. Where this ratio no longer exists, and we have too many neutrons for the number of protons, or vice versa, the nucleus becomes unstable. Stability can then be attained by changing the charge and mass (protons and neutrons) of the nucleus. This is accomplished by the emission of radioactive particles and rays. This process is known as radioactive decay. The rate at which each element decays is known as the "half life".

Here is an example of the radioactive decay of uranium 234. (See Figure 2) Note that uranium 234 has 92 protons and 142 neutrons in the nucleus. This atom is unstable and emits a radioactive particle. This particle is known as an alpha particle. It consists of two protons and two neutrons. When this particle is emitted from the nucleus, the charge will be reduced by two and the mass by four resulting in an isotope of thorium (Ionium). The nucleus of this isotope of thorium emits an alpha particle with the formation of a nucleus with 88 protons and 138 neutrons. This is the element radium. The continued emission of nuclear particles and rays follows an established pattern breakdown or process known as the radioactive decay and results in the formation of other elements including radon, polonium. Finally the non-radioactive state or stable condition of the nucleus is reached, and the stable or last element in the decay process is lead which is not radioactive. Thus, by altering the mass and charge the unstable nucleus is converted into a stable nucleus. This process may also be accomplished by the ejection of a beta particle. A beta particle is a high speed negative electron arising in the nucleus due to the splitting of a neutron into a proton and electron. The proton remains in the nucleus and the high speed negative electron is ejected. The remaining atom has an additional positive charge in the nucleus and retains essentially the same mass.

WHAT IS RADIOACTIVITY NUCLEI OF ELEMENTS

PROTONS +
NEUTRONS +-

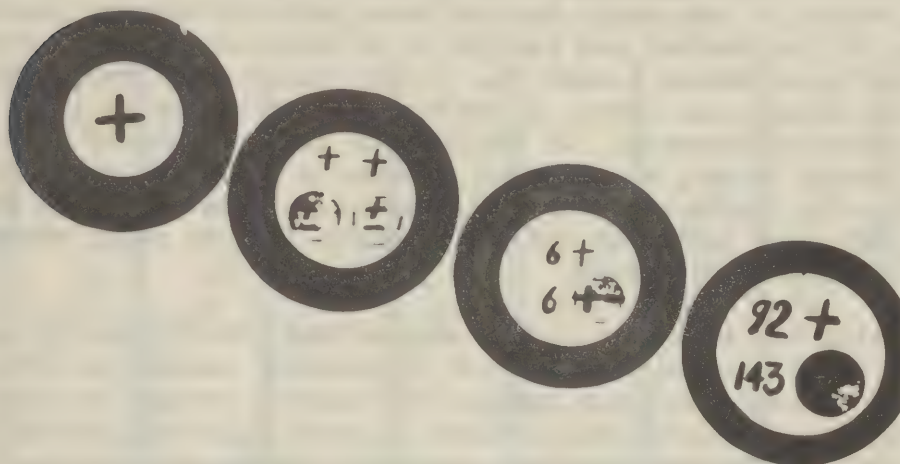


Figure 1

ALPHA PARTICLE BETA PARTICLE GAMMA RAY NEUTRON



ELECTRON



+ -

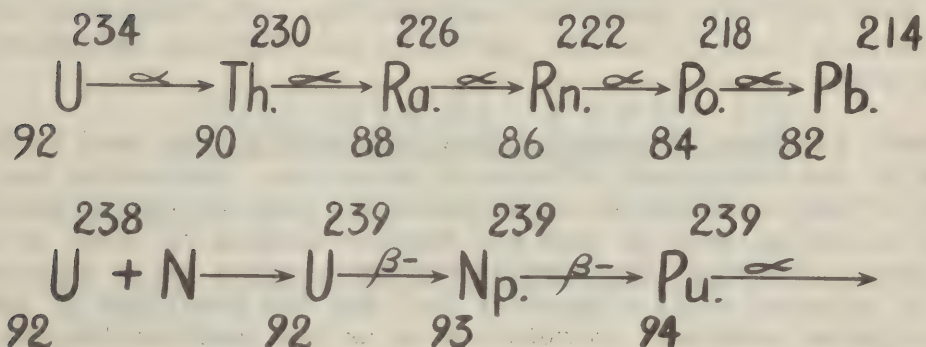


Figure 2

As an illustration let us consider uranium 239. Here the uranium nucleus has a charge of 92 and the mass of 239. In other words, it is composed of 92 protons and 147 neutrons. If the neutron is split into a proton and electron, the electron is ejected from the nucleus and the proton remains resulting in an element with 93 protons. This element is Neptunium which in turn emits another beta particle thereby increasing the charge of the nucleus and results in a formation of a new element plutonium with an atomic number 94. By the emission of radioactive particles, the element may assume a position either higher or lower in the periodic table of elements. In addition to the emission of the beta particle through a very complicated process, a gamma ray may also be emitted from the nucleus of certain elements. Gamma rays (See Figure 3) belong to the same family of radiations which include radio waves, infrared, visible light and x-rays.

Following the detonation of an atomic bomb (See Figure 4) ionizing radiations are liberated by different processes. Radiations from the bomb may be divided into four categories, namely, prompt, delayed, residual and induced. Accompanying the nuclear reaction resulting in the detonation of the bomb, prompt gamma rays are emitted. Immediately following the detonation the fission products which emit beta and gamma rays rapidly rise in a cloud into the atmosphere. The gamma rays from the fission products in this rapidly rising cloud are known as delayed gammas. They can produce severe biological damage for approximately 90 seconds after the detonation.

The delayed gammas contribute approximately 95% of the total dose to which an individual may be exposed following the detonation. Thereafter, the radiation comes from the fission products which fall out of the cloud and are known as the residual radiation. Induced radiation is the radioactivity produced by the bombardment of certain elements by the neutrons released at detonation. Neither the residual nor the induced radiation was significant at Hiroshima. As far as a detonation is concerned, the nuclear particles and rays of biological importance include the alpha particle, beta particle, gamma ray, and neutron. The biological effects of these various types of nuclear particles and ionizing radiations will concern us next.

No doubt you have frequently heard reference to the term ionization as applied to the biological effects of radiation. Ionization can be understood if one considers an alpha particle, beta particle, gamma ray or neutron colliding with an atom and thereby causing the atom to lose an electron from its orbit. The ejected electron, since it is negatively charged, is referred to as a negative ion, and the remainder of the atom (less the ejected electron) is referred to as the positive ion. This process is termed ionization. When the atom or atoms comprising a living cell undergo a specific degree of ionization, the living processes within the cell cease and the cell dies. The mechanism of the cause of death is

ELECTRO MAGNETIC SPECTRUM

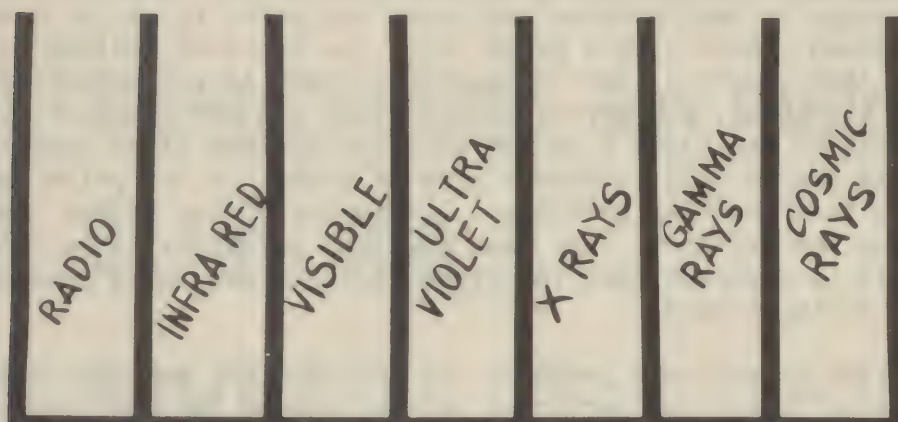


Figure 3

RADIATION FROM BOMB

PROMPT	RESIDUAL	INDUCED
GAMMA	CLOUD	NEGLIGIBLE
NEUTRONS ✓	ALPHA BETA GAMMA	BETA & GAMMA

BIOLOGICAL EFFECTS

HOW DOES IT EFFECT A CELL (IONIZE - ION PAIR)

ALL RADIATIONS HAVE SAME QUALITATIVE EFFECT
ON TISSUE

Figure 4

not understood. However, it appears that the energy released from the ionization process breaks the chemical bonds of the complex compounds within the cell and thereby interferes with the normal cell metabolism.

The alpha particle, which is essentially the nucleus of the helium atom, has the ability to produce an enormous number of ion pairs within a prescribed path of air or tissue as compared with beta particle. The beta particles in turn produce many more ion pairs in air or tissue than those produced from a single gamma ray. The ionizing ability of alpha particles (See Figure 5) per centimeter of path is approximately 10,000 for alpha particles, 100 for a beta particle and one ion pair for a gamma ray. A neutron may eject a proton from the nucleus of an atom and hence the ejected proton will produce a greater number of ion pairs per centimeter path than the beta particle. The amount of ion pairs, however, produced by the proton is less than an alpha particle. From this brief analysis it is apparent that the alpha particle can cause considerable damage to living tissue.

In order to evaluate properly the radiological hazards from the various types of nuclear particles and radiations, we must understand the difference between "external" and "internal" radiation (See Figure 6). External radiation includes all nuclear particles or ionizing radiations which emanate from a source outside the body. Internal radiation, on the other hand, refers to a source of radiation within the body.

The alpha particle is comparatively large as compared to the other nuclear particles since it has a charge of two and a mass of four. The range of the most energetic alpha particles usually does not exceed a few centimeters in air and a few millimeters in tissue. The alpha particle is easily stopped by a thin piece of paper or by the horny layer of the skin. Alpha particles do not have the ability to penetrate and hence externally present no problem.

The beta particle has a range of a few meters in air and perhaps a half centimeter in tissue. Beta particles have the ability to produce very severe damage to the skin if present in sufficient quantities. However, they do not penetrate into the deeper structures of the body such as the bone marrow or the lymph glands. Therefore, from an external radiation standpoint, beta particles only affect the skin. Gamma rays and neutrons both have the ability to penetrate to the deeper structures and vital organs and cause ionization within the tissues which may result in death.

Radioactive materials, from the internal radiation standpoint, may gain access into the body through three different routes: by indigestion, inhalation or through a break in the skin. Internally, the alpha particles are the most dangerous because they are in contact with certain delicate

IONIZING POTENTIAL

ALPHA 10 000 ION PAIRS

BETA 100 " "

GAMMA 1 " "

Figure 5

RADIATION

<u>EXTERNAL</u>		<u>INTERNAL</u>	
ALPHA	= 0	ALPHA	= 4 +
BETA	= 1 +	BETA	= 1 +
NEUTRONS	= 4 +	NEUTRONS	= 0
GAMMA	= 4 +	GAMMA	= 0

Figure 6

tissues and since they have tremendous ionization ability, the adjacent tissue is severely damaged. Such constant trauma over a period of years may result in the formation of malignant tumors. The severity of damage produced by radioactive particles, such as alpha particles from radium, have been tragically illustrated by the cases of radium dial workers who ingested radium by touching the paint brush to their tongue. The ingested radium gained access to the blood stream via the gastro-intestinal tract and was deposited in the bones of the body resulting in the formation of osteogenic sarcomas 5 to 15 years later.

Several factors control the ease or difficulty of getting radioactive material into the body. These include the solubility of the material, the size of the particles, the biological half-life of the material and the principle site of deposit within the body.

Fortunately most of the fission products and fissionable material such as plutonium are quite insoluble. For instance, only .0003% of the plutonium ingested is eventually fixed in the body. Therefore, some fission products which are relatively quite soluble such as barium, strontium, and iodine are readily fixed within the body. The size of the radioactive particles are important in evaluating the internal hazards where particles gain access to the body by inhalation. The nose will filter out all particles of 10 microns or over in size. Ninety-five percent of the particles, 5 microns in size, will be filtered out by the nose. The optimal size for exchange between alveolar cells and the blood stream is one-half micron. Another additional factor in this regard is that fission products adhere to other particles and hence become a larger mass of material. Thus very few particles of fission products or unfissioned bomb residue of the optimal size will be inhaled by an individual following a detonation. The solubility and particle size of the radioactive materials, therefore, represent a safety factor. The beta particle likewise is an internal hazard, but gamma rays and neutrons are of no significance from the internal radiation standpoint.

Patients exposed to atomic detonations at Hiroshima and Nagasaki may be divided into the following groups (See Figure 7) :

(a) Patients who died within the first two weeks. Patients complained of nausea and vomiting on the first day of the bombing, followed by anorexia, malaise, severe diarrhea, thirst and fever. Profound leukopenia was present. Temperature records in all these patients were remarkably similar. Usually between the fifth and seventh days and sometimes as early as the third day there was a step-like rise in temperature, usually continuing to the day of death. The earlier the fever, the more severe the symptoms and the poorer the prognosis.

RADIATION SICKNESS

PROMPT

ACUTE
LETHAL - 1000 YDS.
3 TO 10 DAYS
MEDIUM LETHAL - 1500 YDS
10 DAYS TO 6 WEEKS
OTHERS

RESIDUAL

CHRONIC
INGESTED
INHALED
WOUNDS
SOLUBILITY
RADIOLOGICAL HALF LIFE
BIOLOGICAL HALF LIFE

Figure 7

BURST

AIR

BLAST & BURNS
85%

RADIATION

15

(ALL PROMPT)

GROUND

BLAST & BURNS
DECREASED

RADIATION

INCREASED-RESIDUAL

DECREASED-PROMPT

WATER

BLAST-DECREASED
BURN-ABSENT

RADIATION

PROMPT-ABSENT

RESIDUAL-INCREASED

Figure 8

(b) Patients dying the third, fourth, fifth and sixth weeks or surviving severe symptoms. In this group the anatomical and clinical results of radiation attained their acme. Epilation was prominent, and hemorrhagic and necrotizing lesions were entirely comparable to those seen in aplastic anemia and agranulocytosis, and occurred in the gums, respiratory and gastro-intestinal tract. Petechiae of the skin was almost always present.

(c) In some individuals in whom the bone marrow failed to recover the patients died after a chronic illness of extreme emaciation. In others, concomitant with partial or complete recovery of the marrow, most of the striking manifestations classed as anemia disappeared, but they nevertheless succumbed to complications such as lung abscesses, tuberculosis, etc.

At this point, we should compare the casualties produced by an air burst, ground and underwater burst of an atomic bomb (See Figure 8). From an air-burst bomb (at Hiroshima and Nagasaki) 85% of the casualties were caused by blast and burns; 15% of the deaths were attributed directly to ionizing radiation. The air-burst bomb was dropped from an optimum altitude to cause maximum blast damage.

For a ground burst, the blast damage and fires will be diminished with the result that there will be fewer casualties. The amount of prompt radiation released over the area will likewise be decreased, but the residual radiation will be increased. We can only speculate as to the increased degree of radiological hazard that will result from a ground burst. Many factors will control the amount of residual radiation such as the character of the soil or terrain.

With regard to an underwater burst, such as Test Baker at Bikini, the blast effect will be considerably reduced; only those facilities and vessels afloat in a harbor area will be damaged. Burns will be absent as well as the prompt radiation. Since the bomb is detonated underwater, a large percentage of the fission products will be mixed with the rising column of thousands of tons of water. The residual radiation, therefore, from a Baker type of detonation would cause the radiological contamination of shore and harbor facilities. The extent and security of the contamination would depend upon the depth of the water in which the bomb was detonated, the meteorological conditions, proximity of facilities to the site of detonation and the water currents.

With these facts in mind let us consider the effect a catastrophe such as caused by an air burst, ground and underwater burst might have on a modern city (See Figure 9).

For the purpose of relative comparisons, I will use the symbols ranging from 4 plus or down to give you some idea of the comparative effects.

In an air burst, then, the destruction to buildings will be 4 plus; fire -- 4 plus; transportation -- 4 plus; communication -- 4 plus; and mental shock -- 4 plus.

For a ground burst the destruction to buildings will be 2 plus; fire -- 2 plus; transportation -- 2 plus; communications -- 2 plus; and mental shock -- 2 plus.

For an underwater burst the destruction to ships and harbor installation might be 1 plus; fire -- zero; communications and transportation will be essentially intact. After the radiological hazards resulting from the residual radiation have been determined, transportation should be available to evacuate personnel from contaminated areas. In such a situation a well-organized evacuation plan may save many lives.

In summary, I should like to emphasize that the ionizing radiation from the atomic bomb is not the primary or principle hazard. The destruction wrought by the bomb from the blast, heat and secondary fires are the paramount hazards.

CATASTROPHE	TYPE of BURST		
	AIR	GROUND	WATER
BUILDINGS DESTROYED	4 +	2 +	1 +
FIRES	4 +	2 +	0
TRANSPORTATION	4 +	2 +	0
COMMUNICATION	4 +	2 +	0
SHOCK	4 +	2 +	0(4+?)

Figure 9

MEDICAL DEPARTMENT PROFESSIONAL TRAINING PROGRAM

COLONEL CHARLES L. LEEDHAM, MC
Chief, Medical Service, Oliver General Hospital

COLONEL FLOYD L. WERGELAND, MC
Chief, Education and Training Division
Office of the Surgeon General, Department of the Army

COLONEL LEEDHAM:

Gentlemen, we have two hours in which to present some of the facts of the Army's professional training program as it is carried out at Oliver General Hospital. In that two hours we must cover a great deal of ground - so the matter can best be handled by organizing the discussion into three parts. The first part will be a brief presentation by Colonel Floyd Wergeland, Chief of the Training Division, Surgeon General's Office. The second part will be a presentation of the overall aspects of training program at Oliver General Hospital. The third portion will be a visit to the various training sections in which your primary interests lie, i.e., those interested in internal medicine will meet the Chief of Medical Service, those interested in the various aspects of surgery will meet the Chief of Surgical Service, those interested in laboratory, pathology, etc., will meet the Chief, Laboratory Service, those interested in X-Ray, the Chief of Roentgenology, those interested in NP, Chief of the NP Section. Those interested in hospital administration will meet with our Adjutant, Captain DeMattia. Dental and Veterinary officers will meet the chiefs of their respective branches. So with these very brief remarks I will introduce Colonel Wergeland, who because of the imminent departure of his plan, has only 10 minutes to talk to us. Colonel Wergeland is Chief of the Training Division, Surgeon General's office. This position encompassed not only professional training but all aspects of field training, preventive medicine, nursing, veterinary medicine, as well as training of reserve and enlisted components. Colonel Wergeland made a distinguished record during the War as chief of this division and is the office primarily responsible for the planning of the professional training program as it is now in operation. Recently he has spent two years in China as Chief of the Medical Mission to that ill-fated republic, and is now back with us, just taking up his duties again as Chief, Training Division, Office of The Surgeon General. Gentlemen - Colonel Wergeland.

COLONEL WERGELAND:

I am very happy to be here to talk to you. I'm glad now that all the talk is over with, the dynamic speakers are through, and we can get

down to the meat of the subject, because I think education is the cure of all evils in all countries. Therefore, I am very much interested in education and training. I would like to picture to you a little bit the background in just a few seconds. When the war was about to end, we began to realize that you fine gentlemen were going to leave, and that the Regular Army would have to again take over complete professional responsibility. A quick survey showed that just during the latter stages there were about six Regular Army officers who we could truly say were holding a professional job. And, we had to switch quickly, and get our people back into training, professionally qualified, because we knew at that time, that we would also have to conduct a professional training program or there wouldn't be inducement for anyone coming into the service. We had to follow the trend with civilian medicine; specialties, we somewhat overlooked the general practitioner. However, I think that field is now beginning to come back. We can't get along without him. Therefore, inasmuch as we are now trying to cover the whole field of training, and I'll give the picture to you as to what we are trying to do.

The best way we could do to return our older officers - I shouldn't say older officers, I should say those around 40 - those who could handle the PMS&T jobs and at the same time pursue a residency. A very fine contact was to arrange this with the civilian medical schools, a combination residency and ROTC professorship. We have at the present time in the number one item, PMS&T's plus residencies, 50 such officers today. They are bringing many internes to us. They are acquainting the students with military medicine. It is an excellent field. At the same time we are qualifying our men in their selected specialties according to our requirements.

Colonel Robinson told you about the civilian interne and residency program. We have numerous civilian hospitals in which we have both internes and residencies. They give 2 years for an internship and one year for a residency back to the military service. We are getting our first crop, they are going out to duty, some of those internes now, to overseas stations. Selected from those civilian internes are 55 for residencies which they are going to take in military hospitals.

The third item is our military internships and residencies, of which you will see much while you are here. When we first started there were very few who knew about these internships. This year we have 750 applications. We only have 243 places to put them. They are finding out that they get a very fine training. At the present time we are using a rotating internship, particularly with the mixed type of residency, in order to meet the demands of those we think are coming in. We have also 7 teaching general hospitals in which we have residencies. We have two of those carrying on a general practice mixed type of residency to train people for general practice.

We are also thinking about a new type of training which will bring about the career man from the time he comes in to about 10 years, giving him a background of general practice before he gets into a specialty. We also find today that some of the internes who are sort of floundering around. They don't know just what specialty to proceed in. They are going through these rotating services, and they had their minds made up they wanted to study orthopedics, and they get on the internal medicine service and maybe the chief was of a little better personality, maybe they ran into better types of patients or cases, now he kind of wants to change over to internal medicine. Maybe if we have some mixed residencies of surgical and medical that we could give them a little further rounding out to decide whether they wanted to do surgical or medical.

The fourth item is a military medical training, which we have practically put off because of the demands to take care of the military patients. We used to run a basic course, which I am sure many of you have attended, at Carlisle or at Fort Sam Houston. I see some old Camp Barkleyites here too. We are going to start that up again with basic courses and the advanced course. There will be an associate basic course for Reserve officers, and there will be an associate advanced course for Reserve officer. While we are so extremely short of doctors, we have to comply with the necessities, and while we have to put that off temporarily we sure hope we can get back to it soon. That training is to be conducted at the Medical Field Service School at Fort Sam Houston.

We are also including in our advanced professional courses, the basic science course, which will be more or less of the advanced type of training for the professional officer at the Army Medical Research and Graduate School presently at the Army Medical Center. They tell me it is a luxurious course and I think we have the outstanding professors in the United States teaching in that particular school.

We have not only been carrying on this ROTC in my office, but just recently, feeling that we need to take more interest and wanting to do more for you in the Reserve Corps, we have set up a civilian components branch in the Training Division. That includes ORC and ROTC.

In parting, I just want to tell you that to get here and meet with you and hear your problems in regard to training has been very helpful to me in my future planning. I am fully aware of the shortages you have in training materials, as well as the fact that a good many of you have had military service. You have had the test. You need refresher all right, and we shouldn't burden you with the routine things it takes to take one from non military status to military proficiency. I plead with you to let us have the benefit of your knowledge and give us suggestions as to what you need and how you are going to get those points and at the same time contribute to the Government and better

yourself. We realize also that you are much stronger and bigger body of medical officers than we Regulars are. After all, it is your Army as well as mine. What you do will help us a great deal. You are 15,000 strong, and we can hardly maintain our 1500 or 1700, whatever it happens to be. So in the overall picture, we are really a small representation. I hope you will coordinate with Colonel Bauchspies and his assistants; that from time to time you will help keep me posted.

I also want you to help us in selling the young doctors on the medical service, because I know you attest to it by being here; that you want first class medical service in the Armed Forces, so when your sons leave home you can be sure we are going to take just as good care of them as you would take care of them at home. That is the standard we want to maintain. We are not going to let the medical professional standards we have attained die.

Recently we had a report by Doctor Curran, whom many of you know, with very laudatory remarks about his recent inspection of Oliver General Hospital. I don't dare say that Oliver is better than any other hospital, but it is awfully good, and the report speaks of the ability of this teaching staff. Every one of our hospitals has a Hospital Education Committee comprised of the chiefs of the services, with the commanding officer acting as the chairman to control the training within each hospital. They establish relations with the medical schools and it is through them that we conduct our training at the general hospitals. I am sure that Colonel Leedham, Colonel Lowry, Colonel Ramsay and other chief of the services here will give you further information these next few days. We solicit your help in carrying over our training program, that we will be able to maintain these professional standards that you helped us to build up during the War so that when the next time comes we won't have to wait to get it going. Thank you very much.

COLONEL LEEDHAM:

My part in this afternoon session is to tell you something of the overall picture of the training program at Oliver. Naturally, we are very proud of our program, we have had some very good reports as Colonel Wergeland has just mentioned. We are prouder than ever because the program is so new. It was first started in this hospital on 1 January 1947, therefore, just a little over two years old. The Surgical Service kicked off the program. The Medical residency program followed in July of 1947. We took our first clinical clerks in January 1948. Our first internes reported first of July 1948. Thus our newest element has been with us only nine months. In this two short years our hospital has been approved for residency training by the following Boards: internal medicine, general surgery, orthopedic surgery, ophthalmology, anesthesiology, pathology and radiology. We have a tentative approval on otolaryngology which, I was told last week, would shortly be made permanent. As I say, we are proud to have been able to accomplish all of this in a matter of two years.

The teaching staff of our hospital is made up of two components, the assigned officers and the attending civilian physicians. The assigned staff are those duty officers who have met qualifications prescribed by the various Boards and are here in a supervisory and teaching capacity. The attending staff is drawn principally from the faculty of the University of Georgia School of Medicine. Although there are some members of this component from other places, the bulk of the attending personnel is from the medical school. We have on that staff such men as Dr Sydenstricker, Professor of Medicine; Dr Sherman, Professor of Surgery, Dr Greenblatt, Professor Endocrinology; Dr Cleckley, Professor of Psychiatry; Dr Rinker, Professor of Urology; Dr Volpitto, Professor of Anesthesiology; Dr Mulherin, Professor of Pediatrics; Dr Pund, Professor of Pathology, Dr Major, Professor of Thoracic Surgery; and a host of others. From out of town we have among others Dr J. Warren White, Greenville S C, in Orthopedics; Dr Wiley Forbus, of Duke Medical School, in Pathology; Dr Howard Hailey of Atlanta in Dermatology; Dr Hiram Kite of Scottish Rite Children's Hospital, Atlanta, in Orthopedics; Dr Julian Kaufman, Veterans Administration in Allergy.

Our teaching plan is that prescribed by Surgeon General's Circular 5, dated 13 January 1948. That document is lengthy, 28 pages long, and prescribes in some detail the foundation of our program. For instance, it prescribes the required exercises, the length of service in the various subdivisions of the specialties, the functions of the Education Committee, delineates rather clearly the duties of the residents and internes.

The local elaboration of that plan has been one of adaptation of that directive to our own specific problems. We teach on the foundation of patient responsibility, adequate reading and repetition. Every resident and intern had definite patient responsibility, in fact, a rather full load of patient care. The entire organization of the professional side of the hospital is based on that patient care by the house staff, supervised, of course, by the assigned and attending staff. Incidentally, we have been able to relieve our house staff of all administrative responsibility other than care of the patient. MSC officers now hold property on all services, handle non-professional details of all wards. The resident is involved in administration only when there is an actual professional aspect, such as CDD Boards, ARB, etc.

To further elaborate we have learned that work is the basis of learning. Therefore, we don't "spoon feed" our house staff, rather we try to stimulate and guide them, feeling that by making material available the resident staff will learn and retain more if they apply the necessary energy - hence the patient load and the adjunct reading. Again I wish to emphasize that our teaching foundation is patient care, bedside teaching with emphasis on clinical basic science.

We do emphasize adjunct reading. This reading falls into two phases: case reading and organized exercises. To illustrate what we mean by case reading, on the Medical Service there is a definite policy that every resident and intern will "read his cases". We feel one learns a great deal more about a subject by reading it when he is involved with that subject and definitely interested. We feel this purposeful reading is preferred to abstract reading. My advice to all residents and interns is that if you have a case of pneumonia, read about pneumonia tonight, come back tomorrow and apply what you have learned. Tomorrow you may have a case of bronchiectasis, read bronchiectasis tomorrow night. Again the next day you may have a case of lung abscess, read about lung abscess that night and then when you get another case of fresh pneumonia, go back and read more about pneumonia, come back and apply what additional facts you have learned. As you see, the purpose of this case reading is to firmly fix the various aspects of a subject while it is easily absorbed.

The organized exercises referred to fall into four headings: CPC, journal clubs, tumor board, and weekly service meetings. We will not discuss CPC at this time inasmuch as you will see tomorrow morning how this exercise is managed at Oliver General Hospital. The Tumor Board is really a tumor clinic, handled by Surgical and Pathology Services. It is actually a case presentation, the various aspects of each condition discussed under the headings of etiology, pathology, clinical symptomatology, prognosis, and therapy, by surgeons, roentgenologists, pathologists and the University oncologist, Dr. Wamrock, whom we soon hope to add to our staff.

Journal clubs as held on the Medical Service are informal discussions at which residents present reports of the articles they have read during the week to one of the duty staff. We keep these sections small, never over 2 or 3 residents so that each individual can perform during that hour and discussions can be kept on a personal basis. We must distinguish journal club reading from case reading previously referred to. In the journal club we attempt to cover subjects of which we have little clinical material at Oliver General Hospital. For example, we are somewhat short on hematology at this hospital, hence we cover hematology extensively each year in the journal club. Likewise we attempt to cover basic sciences to some degree, plus the recent advances, especially the newer developments such as hypersensitivity, adaptation syndrome, alarm reaction, adrenal cortex studies, etc. We have had the gratifying experience of having our first resident who wrote the Board on Internal Medicine report that the journal club reading had covered about 25% of the questions asked.

The service weekly conferences vary somewhat from service to service. In general, it is an attempt to present material in a bit different fashion than at other exercises. Sometimes the attending staff or the duty staff occupy the hour reporting on a new development or a meeting they have attended, sometimes a movie is shown on some aspects of professional work, more often the various sections of the services spend

the hour putting on a program showing cases which are unusual or instructive, giving a complete background of the subject under discussion, again including etiology, physiology, pathology, symptomatology, prognosis and therapy.

In this connection I might point out that it is one of the aims of this educational program to train our resident staff to talk on their feet. Every opportunity is given them to talk during the CPC's, the weekly conferences, tumor boards, various ward rounds, problem case clinics, etc. It is our aim to send out people thoroughly able to discuss intelligently and acceptably any subject in their field. On our service conferences particularly we teach our residents to talk from simulated lantern slides (using the bellopticon) much in the style of the county society meetings. By the time a man has finished two years with us he should be able to be an acceptable speaker at the average county society medical meetings. By the end of the third year we hope that he will be able to hold his own on any discussion at state or national society levels. It is also very gratifying to have seen two of our residents develop in two years from hesitant speakers into thoroughly confident individuals when talking on their feet, even extemporaneously. You will see an example of this tomorrow morning at the CPC when one of the senior residents is called on to close the discussion.

The matter of repetition needs little discussion. It is an accepted principle of pedagogy. We aim to repeat all the material each year in our journal clubs and in our Saturday meetings; to cover all of the acceptable subjects in two years in our CPC's. The real repetition, however, comes in repeated discussions of similar cases, repeated reading on those cases covering additional material again and again for CPC's, journal clubs, tumor clinics, ward rounds, problem case clinics, and sectional conferences.

One of the most important things in any training program of the professional establishment is an adequate medical library. We have that. We have had full and complete cooperation from Surgeon General's office in the way of funds for binding, the purchase of books and periodicals, and as a result we have now what I consider to be a first class library. Of course, it was established in 1943 when this hospital was opened and some of our journals don't go back much farther than that. However, we overcome this defeat by a reciprocal relationship with the University of Georgia library in that we can borrow any book or periodical that they have. In fact, we send a messenger every morning with a list of things we want to borrow and a batch of material we are returning. It has worked out very well. In return we are able to furnish them some of our literature because we do take a large number of the professional journals and here and there we have a text which they do not. To give you some of the library statistics: we have 3,391

volumes, we subscribe to 179 professional journals, we have bound something like 600 volumes at the present time and we have funds and allotment to bind about 100 more. We maintain our library open from 10 in the morning and until 9 at night, on Saturdays from 9 to 3 and on Sundays from 10 to 12. We have 2 full time librarians and their time is so arranged that there is someone in that library during open hours. For duty personnel who want to get in the library for any reason after the open hours, we have a key available at the information desk, so that the library is readily available 100% of the time. It is really a pleasant place. I'd like to have you drop in and see it. It is behind our popular library which you see as you come in our main door. There are two rooms of popular library and one room of medical library. Just make yourself known and the librarian will show you around.

Another feature of our training program is the cooperation which has been attained with the University of Georgia Medical School. We've had the most pleasant relationships, mutually advantageous. As I have said, our attending staff is full 90% made up of University of Georgia teachers. These teachers are the attending men on wards, they conduct rounds, they help us in our clinics, they help us out with teaching and on the Surgical Service they do a certain portion of the surgery. In fact, due to the present shortage of qualified Army teaching personnel, these men make our training program possible.

On the other side of that picture Oliver General Hospital is one of the teaching hospitals of the University of Georgia Medical School and some of us hold teaching appointments in that institution. Our function in their teaching program is to assist in the training of clinical clerks. We have clinical clerks assigned both Medical and Surgical Service; in fact, each Service has one of the nine sections of the senior class on morning duty at all times. The Senior Class at the University is divided into three parts, Medical, Surgical and Out Patient. Each section is further divided into three sub-groups. We get all nine of those sub-groups on the Medical Service during the school year, all nine reach the Surgical Service during the school year, so each senior spends two months at Oliver General Hospital during his senior year of training. The clinical clerkship program has worked out very advantageously, not only in furnishing stimulation to our duty and resident staff that only medical students can, but in addition it has acquainted those medical students with first hand information on an Army hospital. In this year's group of interns we have four from last year's clinical clerkship class, next year we have seven interns signed up from the present senior class at the University of Georgia.

Another aspect of the cooperation between this hospital and the University of Georgia Medical School is the reciprocal relationship of the resident staff. Our residents are free to attend rounds at any time at the University of Georgia, to see any material that they have,

their residents likewise are free to attend any exercise at Oliver, to see any material that we have. In fact, when the senior resident I previously spoke of was about to write his Board, we detailed him for two weeks at the University Hospital to get a little different point of view on medicine, he worked as a resident on their wards for those two weeks. Likewise our laboratory works in close cooperation with them. Some of our staff work in both places, for instance, Dr Wamrock, our expert in dermatology, works a half day at this hospital, a half day at the University. On July 1 we will extend a similar relationship to Dr. Reeves, who will work half time with us and half time as a fellow in the department of medicine at the University. So, you see, our relationships are very close.

Another feature of our training program which I should like to emphasize is our group of distinguished visitors. Once a month during the school year we bring in a distinguished personality in one of the fields of medicine or surgery. This distinguished guest is usually the principal speaker at our monthly professional staff meetings which we hold the fourth Thursday of each month during the training year. In addition to giving the principal address at that meeting these visitors usually stay 24-48 hours, conducting clinics, ward rounds, seminars and conferences and not infrequently additional informal talks on some subject in which they are interested. These visits have been very stimulating; in fact, they have been an inspiration to our entire staff, both teaching and resident. Some of the famous people we have had here are Dr Francis Dieuaide, expert on tropical medicine; Dr Edward Bland, of the Cardiology Clinic of Massachusetts General Hospital, who has now taken Dr Paul White's place; Dr Johnson McGuire, the cardiac physiologist from the University of Cincinnati; Dr William Middleton, Dean of Wisconsin Medical School; Dr Philip Hench, one of the outstanding men in the field of arthritis; Dr Irving Wright, one of the leaders in anticoagulant therapy, incidentally in his new book he is mentioning one of our cases; Dr Eugene Stead, Professor of Medicine at Duke; Dr Webb Haymaker, one of the leading neurological pathologists from the Army Institute; Dr George Baker, neurological surgeon from the Mayo Clinic; Dr James Greear, former Professor of Ophthalmology at Georgetown University; one of the leaders in the field of orbital reconstruction; Dr Edmond Ernst, who will be with us next week as a consultant in radiology; and Dr Dwight Harken, Boston, who has taken out (in round numbers) 150 foreign bodies from the human heart without a single death. His talk and movies were most interesting. In addition to having these distinguished personalities, we have been privileged to have Mrs H. C. Wilder give a course of five days in pathology of ophthalmology. As you know Mrs Wilder is one of the leading people in that field.

Now, I'll close this talk by giving you some statistics on the program. We now have 34 residents in all of our departments. We have sixteen interns, and four dental interns in addition. We are authorized

on July 1, 59 residents. I doubt we'll get the full quota. We are authorized 24 interns, we have 21 so far listed. We have the four dental interns authorized. There is no increase that I know of in that department. The breakdown of residents with us at the present time is Medicine, 8; Ophthalmology, 2; ENT, 1; Orthopedics, 5; Surgery, 9; Anesthesiology, 2; GU, 2; Pathology, 3; X-ray, 2; total 34. There are slight increases all along the line to make that figure 59. At the present time we have 16 interns and they come from a wide group of places, four from the University of Georgia, one each from University of Virginia, Ohio State, Iowa, Cornell, University of Pennsylvania, Pittsburg, Emory, University of Vienna, Southwestern, University of Tennessee, NYU, and the Medical College of South Carolina. Next year we have much the same distribution except we have seven coming from the University of Georgia, three from Vanderbilt and one each from University of Louisville, Kentucky, Duke, Wayne University, Washington University, St. Louis, Tufts, St. Louis University, Minnesota and the University of Buffalo.

With this brief presentation I have attempted to highlight the training program as we carry it out at Oliver General Hospital. I know there are numerous points which have not been covered and many questions which can be asked. In order to save time, I should like to suggest that after this distinguished group divides itself into the various sections in which it is interested that you ask those questions of the leaders of your discussion groups.

The group then assembled by specialties, Medicine, Surgery, NP, Laboratory, X-ray, Dental, MSC, nurses, etc.

PATHOGENESIS OF PRE-INVASIVE CARCINOMA OF THE CERVIX

LT COL JOE BLUMBERG, MC
Oliver General Hospital, Augusta, Georgia

EDGAR PUND, MD
Professor of Pathology
University of Georgia, Augusta, Georgia

COLONEL BLUMBERG:

On the printed program the topic is listed today as "Pre-invasion Carcinoma." This may be all right since this is a Medico-Military Symposium, but since this isn't "D" day or "H" hour, it would be better to omit the typographical error and state at this time that the topic is "Pre-invasive Carcinoma of the Cervix." The talks today are not prepared lectures, but will be given from lantern slides. I am sure that most of you already know of the work Dr Pund has done on this subject by his numerous articles that he has already written. He is the pioneer in this field and I am fortunate to be associated with him. It must be remembered that many of the views expressed here today are not thoroughly concurred in by doctors throughout the country, as many things are still equivocal and must yet be proven. However, the subject is presented to stimulate the physician into knowing what some of these views are and an attempt to show one phase of the work today. The talks this afternoon actually represent an exhibit that Dr Pund and I are presenting at the Annual Convention of the Medical Association in June. Dr Pund will speak to you on the Pathogenesis of Pre-invasive Carcinoma and at the same time will present some of his statistics from the University of Georgia Medical School. Following that, I shall present twelve cases from Oliver General Hospital that illustrate cases handled correctly and incorrectly with some of the highlights to the proper approach of detecting these cases. As you know, Dr Pund is Professor of Pathology at the University of Georgia Medical School. It gives me pleasure to present him to you at this time.

DR PUND:

Colonel Bauchspies, Colonel Blumberg, ladies and gentlemen, I hardly feel prepared to accept the bouquets because I feel sort of at loose ends as to whether I will live up to the reputation that has been presented today. It is with a degree of self-consciousness that I speak, knowing that what I say is being recorded and may be used against me. This is rather a summation of our observations on what we consider the pathogenesis of most carcinomas of the cervix. As Colonel Blumberg has mentioned, we do not know whether all pre-invasive carcinoma, as such, will ultimately result in invasive carcinoma. According to the

statistics we have accumulated, it does seem that they probably do. It is interesting to note the age differences in instances of cancer. First of all, in a series that we have studied at the University of Georgia, we found that pre-invasive carcinoma occurred in women at an average age of 36 years. We found that in what we have termed covert invasive carcinoma, that is, the carcinoma that is concealed from view from the vagina because it develops at the junction of the squamocolumnar epithelium and invades directly up the endocervical canal and that the average age is 42 years, giving a difference of 6 years. Taking the average age of patients that come to a doctor, who sees a cancer on the cervix and biopsies it because he thinks it is cancer, the average age of these patients is 49. Now, the importance of this is that in following the steps from the time pre-invasive may be detected between 36 to 42, with the average time of an invasive cancer occurring at 49 when it can be seen, we then have a period of 6 or 7 years in which all cases of cancer of the cervix are curable. It is important to recognize the early cancers because thereby lies a chance to increase the cure rate. It is also necessary to understand the pathogenesis which I hope this seminar will show. This will be a rather fast review of a number of cases which will speak for themselves. The first slide (Figure 10) shows where cancer begins at the junction of the cervical endocervical epithelium and a biopsy should always be taken in that particular region. They show more disposition to displace the columnar epithelium than they do the squamous epithelium, and this is the type that is found at an average age of 36. In our cases of uteri studied, we have found that infections occur at this point as well and may involve the glands. Metaplasia also occurs at this point and may extend down into the glands, but we do not consider this invasion since this is confined to the natural surfaces. When pre-invasive carcinoma follows the same route of the natural surfaces into the glands, that is not considered pre-invasion either. The next stage where invasion takes place and it may occur at any one of these points is at the endocervical junctional epithelium or it may emanate from some of these endocervical glands. When that happens we have the growing out from here as an asymptomatic cancer. We may have asymptomatic cancer characterized by spotting, but no gross evidence of cancer can be seen. From the slides of a normal cervix you can see how cancer can occur at this area and not be seen from the vaginal side. These we designate as covert invasive cancers. When invasion has taken place, they are probably best treated with radiation therapy. Later on as invasion takes place, penetration of the portio vaginalis occurs and the neoplasms project out on the surface and at that time we have a cancer that can be seen and recognized as such. That is the reason the patient is 49 years old when she comes to the doctor. They can be seen because it is already an advanced one. About 80% of all women have something at this place. Here we were very fortunate in having a normal uterus removed in order to get this beautiful picture that shows a normal junction. The highpower shows the abrupt change from the squamous

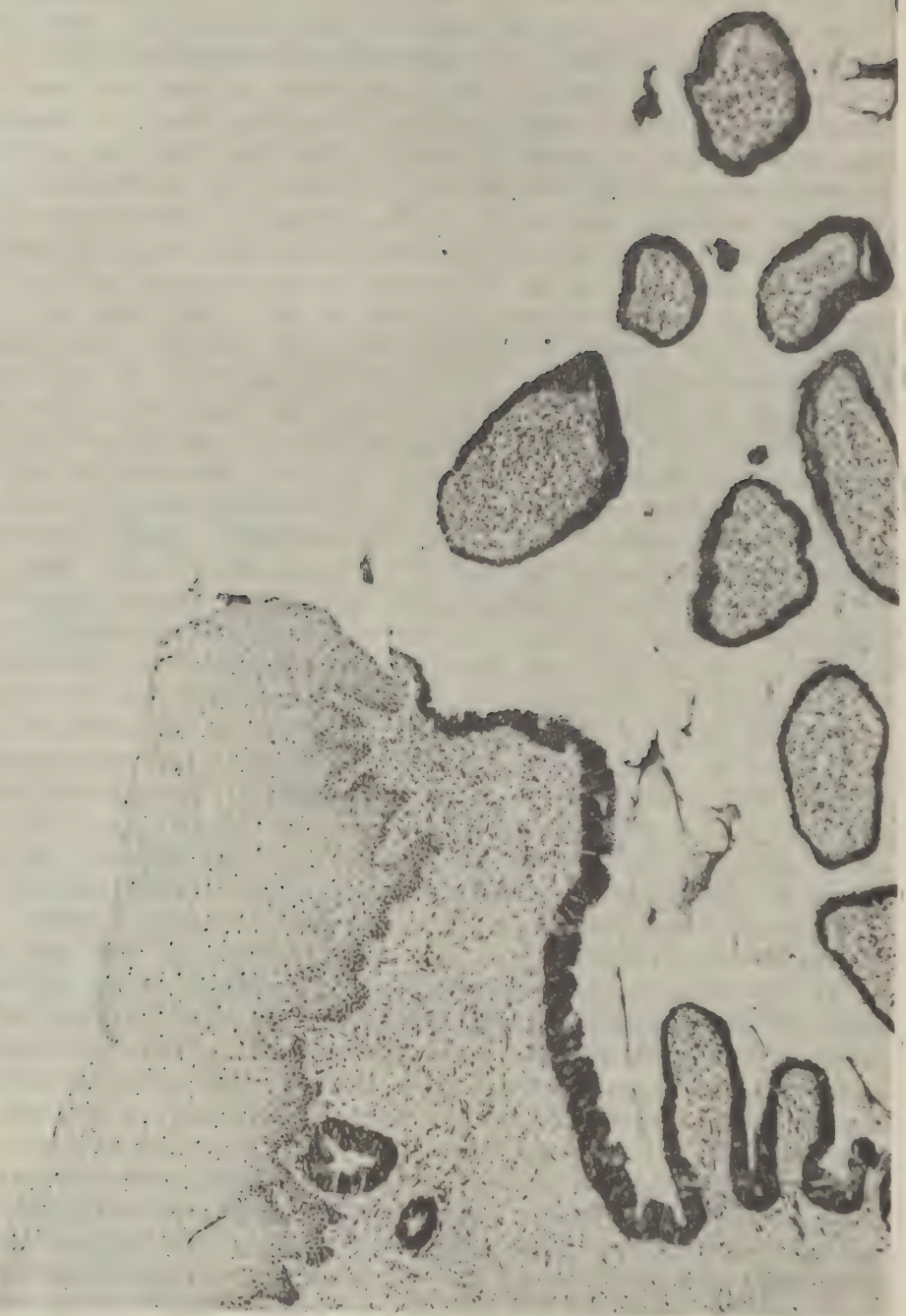


Figure 10. Junction Cervico-endocervical Epithelium.

epithelium to the columnar epithelium. In taking a biopsy, due allowance must be made for ectropion where the junction can be altered from its usual position. The next slide (Figure 11) shows a block taken out at the junctional epithelium showing reserve cell proliferation. What are reserve cells? Reserve cells are replacement cells that lie in the crypts of the glands and along the surface of the endocervix and are the parent cells of many of the pre-invasive cancers. They are also the parent cells of the normal epithelium and can differentiate in one of three ways. They may go on to replace the cells that are shed or may go on to carcinoma or most frequently they differentiate to form squamous epithelium. The reserve cell is a very important cell in the cervix because they occur in abundance at the squamo-columnar junction and if they show a tendency to differentiate under the influence of inflammation they are squamous cell in type or regenerating as a basaler cell type. With regeneration they may not show other than reserve cell proliferation. This is important as Colonel Blumberg will assure you because this is a sort of preface to his remarks. Figure 11 is a section of cervix that shows the reserve cell proliferation at the junctional epithelium. This is not cancer. All the cells are differentiated, being uniform in appearance, and they are building up and going on to give us a covering of squamous epithelium. Figure 12 shows how this differentiation may extend into the glands. This epithelium dips down into the glands because the reserve cells proliferate here to form the squamous epithelial cells. Where it dips down into the glands, the reserve cells proliferate from the basaler cells and fill the gland. Therefore, when cancer is confined to the natural surface, we do not consider this invasion. Figure 13 is taken at the squamo-columnar junction at a point of ulceration that is now being replaced by reserve cells showing variation in the cells characterized by an increase in the nuclear size with loss of ratio of the nucleus and cytoplasm as well as bizarre nuclear figures. This same picture can be duplicated in any invasive cancer so that here we have a pre-invasive carcinoma confined to the natural surface occurring at the squamo-columnar junction. Figure 14 shows the squamo-columnar junction under highpower, shows the same features as mentioned previously in that we have large nuclei again with loss of nuclear cytoplasmic ratio. This is representing pre-invasive carcinoma without evidence of invasion. It shows no definite tendency of the cells to differentiate. Notice the large nuclei and the small amount of cytoplasm, also from the squamo-columnar junction shows again the anaplastic type of cells without invasion. This is a carcinoma of the cervix as yet extremely undifferentiated with very large nuclei. Figure 14 shows the variations that may take place. At the squamo-columnar junction here we have cells showing some tendency to differentiate. It has been said by some that if any tendency to differentiate is present, it is not cancer. We do not subscribe to that. Notice the variation in nuclear detail, the size of the nuclei being tremendous both at the base and out on the surface. Normal epithelium should never have nuclei like this; this retains its basaler

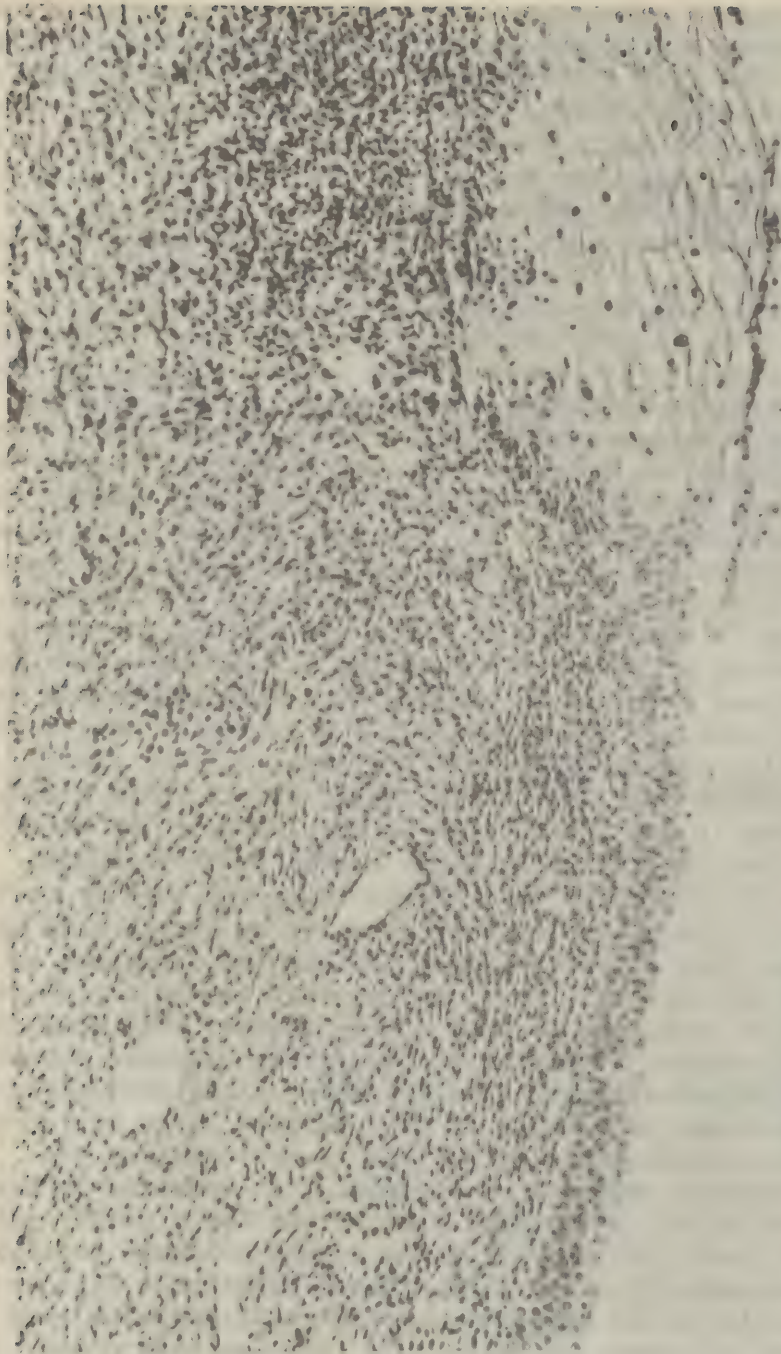


Figure 11. Junctional Epithelium Showing Reserve Cell Proliferation.



Figure 12. Reserve Cells Proliferation to Form Squamous Epithelial Cells.



Figure 13. Squamo-columnar Epithelial Cell Junction Showing Ulcerated Area Being Replaced by Reserve Cells.



Figure 14.

Squamo-columnar Junction. H. P.

appearance and illustrates a reserve cell type of invasive carcinoma that has gone on to slight differentiation. In Figure 15, taken at the squamo-columnar junction, notice that the glands are readily filled up with cellular elements that are an extension of the pre-invasive carcinoma into the glands. However, it remains as pre-invasive because it is still confined to the natural surfaces. In Figure 16 which is taken from the junctional epithelium, we have the squamous type of cancer while the other was the reserve cell type. This behaves exactly as the other pre-invasive cancer, but extends down into the glands. Notice the absence of polarity and the building up of the nuclei near the surface. I shy away from the term basal cell carcinoma when applied to the cervix, because it does not carry with it the same meaning as the basal cell carcinoma of the skin. We prefer to speak of it as the reserve cell type of cancer in the cervix. We also have cancer that may arise from leukoplakia, but even these sometimes show a tendency to grow up into the endocervix. Figure 17 shows a case where the cancer began in this region and grew up the endocervix. The highpower shows the nuclear detail and the anaplastic changes. So then we see that cancers can arise from the cervix, without a doubt, but we found that most of them do arise at the squamo-columnar junctional epithelium. Notice also the similarity of pre-invasive cancer to that of invasive cancer. Figure 18 is from a patient who was operated on without knowing that she had cancer. This is the vaginal portion of the cervix. Here is the endocervical canal and here we have an advanced invasive carcinoma without any disturbance of the vaginal part of the cervix. Figure 19 shows a similar case with the carcinoma extending in this direction up the endocervical canal with invasion away from the vaginal portion of the cervix. The cancer in these cases was apparent and these mistakes being removed without knowing cancer was present. This was a very interesting case. Figure 19 is a section of the cervix where we have an invasive cancer emanating from pre-invasive cancer which had extended down into the glands and this slide shows invasion taking place from this particular area emanating from the glands. This is an important point because it shows you the reason for multiple biopsies. If a biopsy had been taken from this point, we would have recognized it as an invasive carcinoma. There you see it is definitely invasive cancer. This is the other lip which shows no evidence of invasion but is pre-invasive. If the biopsy had been taken from this lip, we would have thought it not to be pre-invasive cancer. It is very important to know that because the treatment would be entirely different. As long as we know that the cancer is confined to the natural surfaces which also means the natural surfaces of the glands, we feel that these patients can be cured with surgery. They can be followed temporarily, but unless we are quite sure that the biopsy was sufficient to rule out invasion at some other point, then we cannot temporize too long. This places a great deal in the hands of the surgeon for the safety of the patient. It is important to determine whether there is invasion or not. One point I would like to emphasize to you is that one can have a fairly advanced cancer which

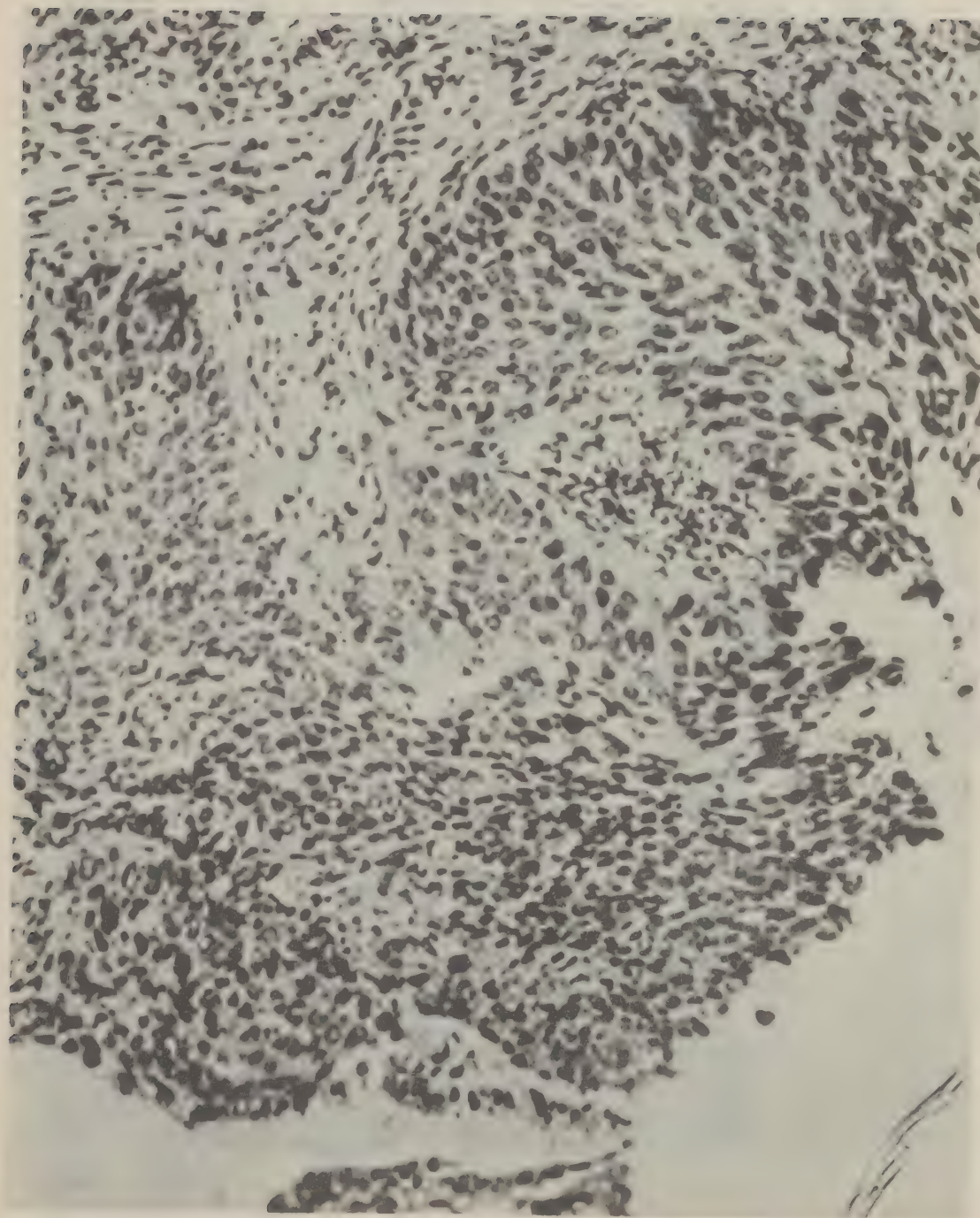


Figure 15.

Squamo-columnar Junction Showing Glands
Filled with Cellular Elements.

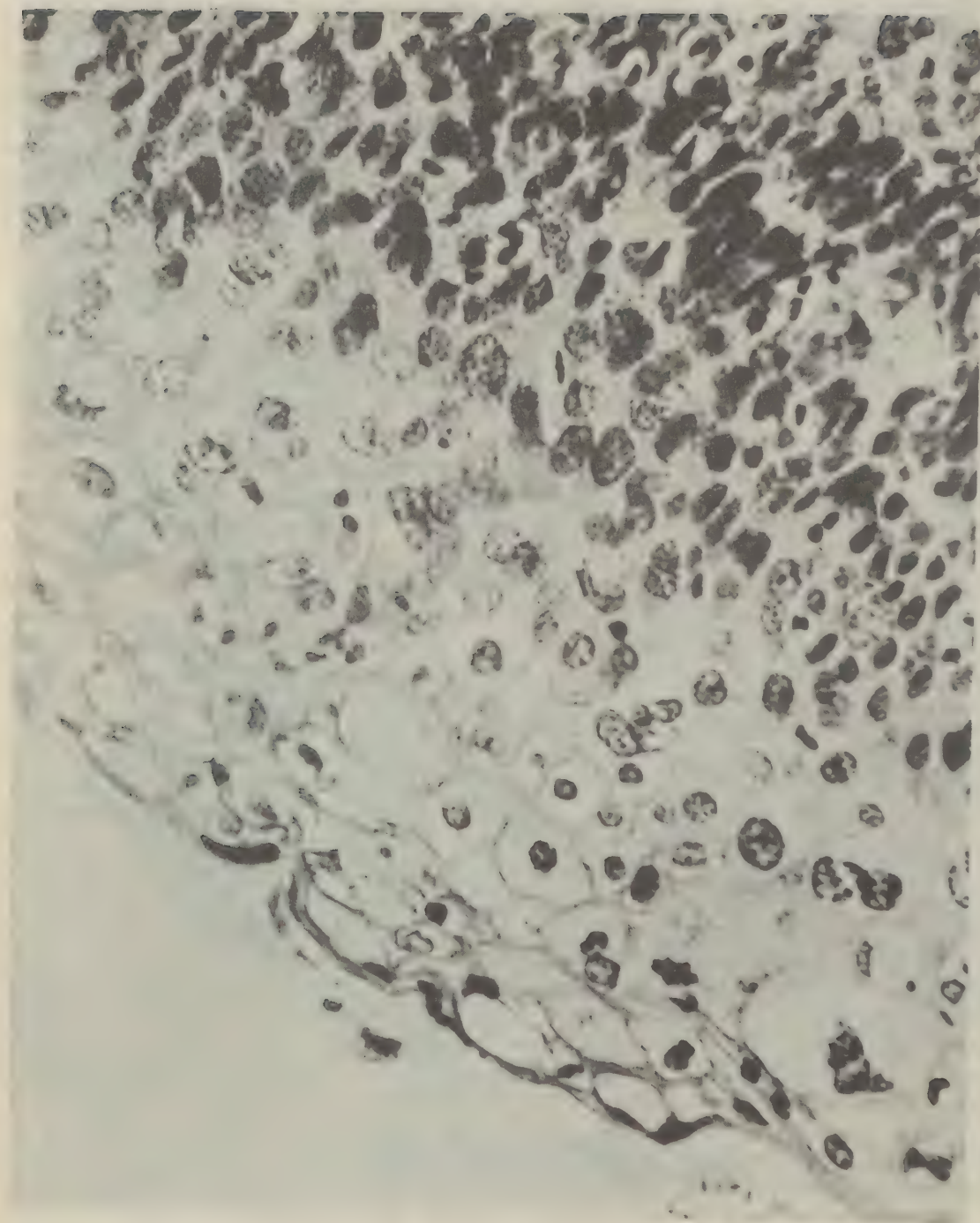


Figure 16.

Squamo-columnar Junction Showing
Squamous Type of Cancer.



Figure 17. Endocervix Showing Anaplastic Changes. H. P.

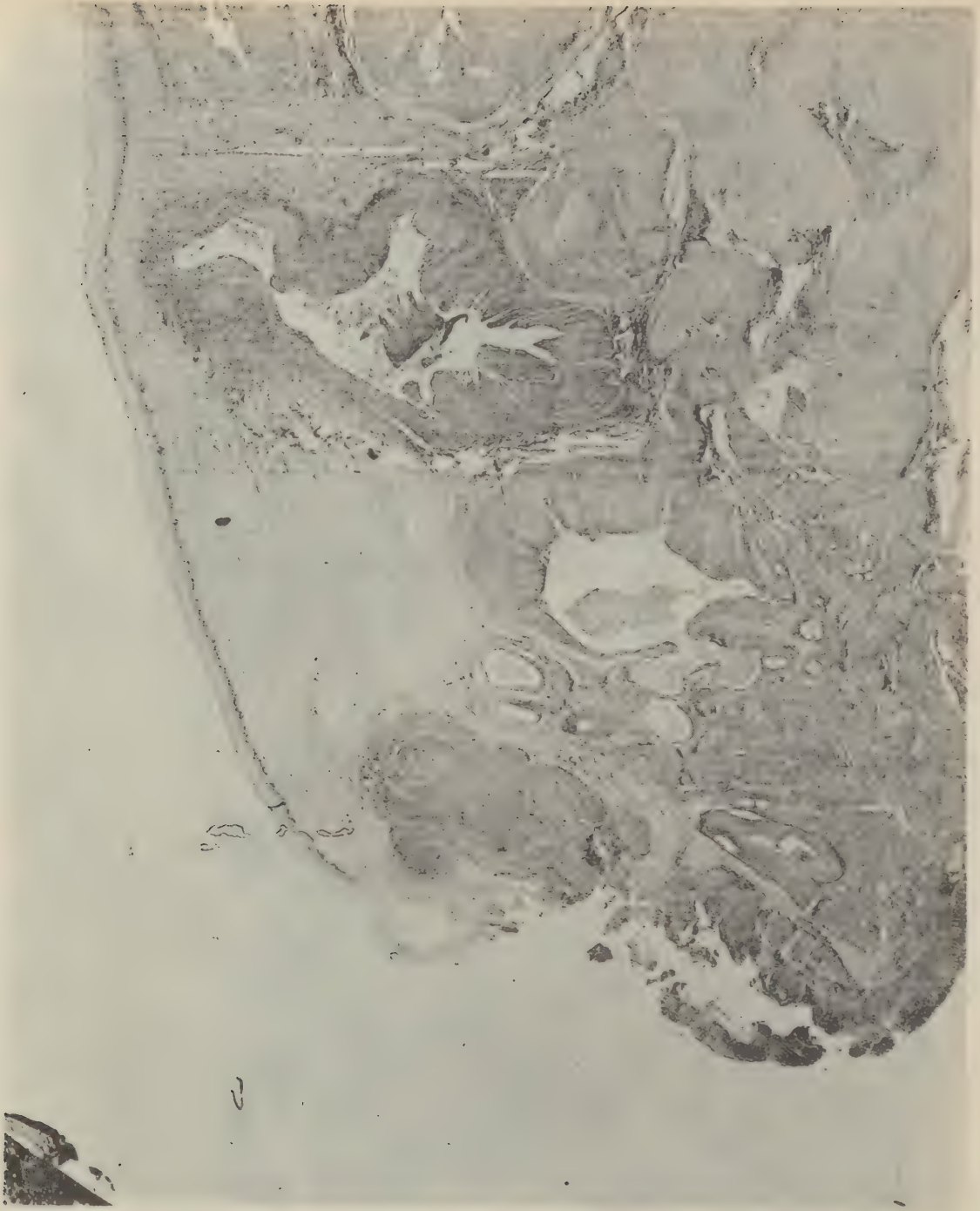


Figure 18.

Section From Vaginal Portion of Cervix
Showing Advanced Invasive Carcinoma.

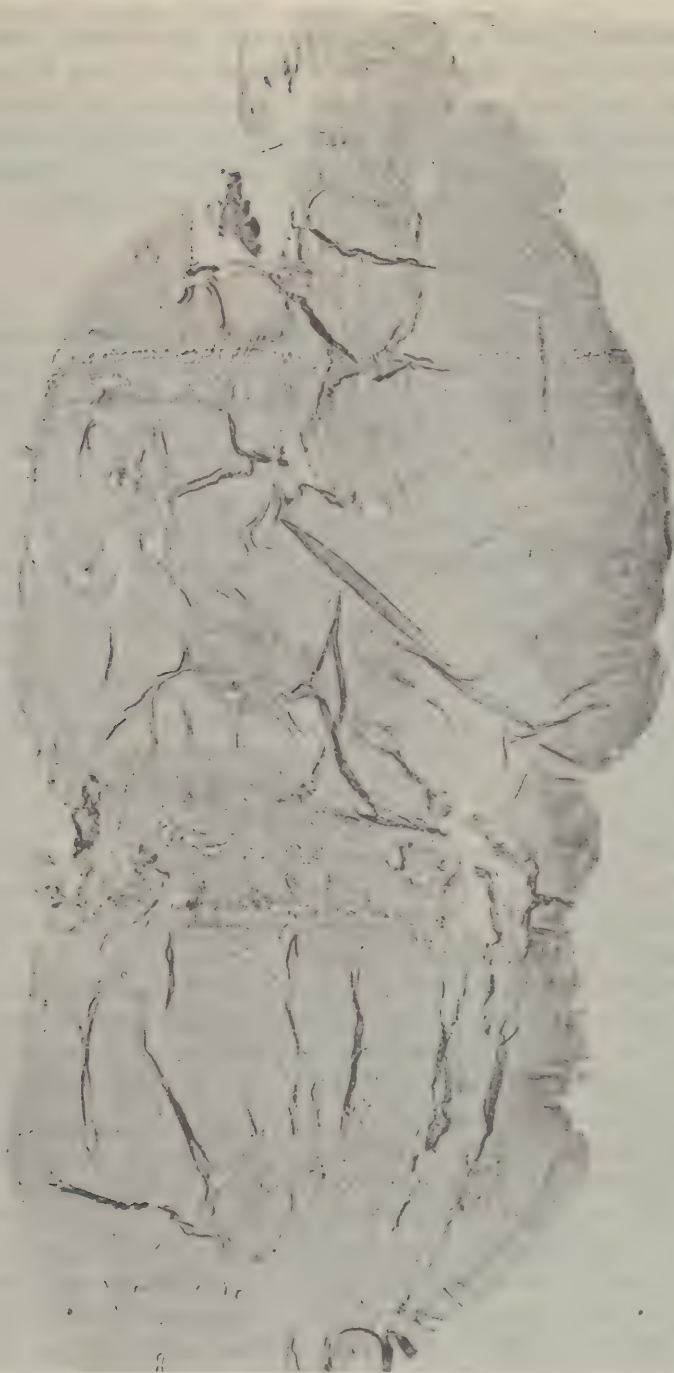


Figure 19. Carcinoma of Endocervical Canal with Invasion
Away From Vaginal Portion of Cervix.

extends into the endocervical canal and which cannot be seen or felt on examination. These cancers that are not apparent give very few symptoms on the part of the patient and can only be recognized from biopsy from multiple points at the cervical-endocervical junctional epithelium. It is important to determine this as it makes a difference in the course of therapy which will be applied to the patient. I thank you very much for your attention, as I have really enjoyed speaking to you.

COLONEL BLUMBERG:

Thank you very much, Dr Pund. I shall try to present some case histories that have come to us either from patients admitted to OGH or cases that have been submitted to the Histopathology Center, with the idea being to illustrate the important points that have been brought out by Dr Pund.

The first case is a 29 year old colored female that had a D&C and biopsy for uterine bleeding. The biopsy showed pre-invasive cancer, reserve cell type. On this slide (Figure 20), note the irregular nuclei and that the epithelial changes are confined to the natural surfaces, even where it has dipped into the glands. There was insufficient information pertaining to this biopsy, so another was requested which failed to show evidence of pre-invasive cancer. This showed squamous metaplasia and from this slide (Figure 21), under highpower, we can see the glands of the endocervix with the area of metaplasia on the surface and absence of pre-invasive cancer. The endocervical scrapings which we see on this slide (Figure 22) also showed metaplasia and pre-invasive cancer. Since invasion was evident, a hysterectomy was advised and performed with preservation of the ovaries. Section taken from the uterus after operation confirmed pre-invasive cancer. This confirms the value of multiple biopsies taken at the proper point of the junctional epithelium, for one biopsy showed pre-invasive cancer while the other did not. This also illustrates how a patient may have a negative biopsy and the value of also doing an endocervical curettage at the same time, for in this case pre-invasive cancer was found in the endocervical scrapings even though the biopsy was negative. It is interesting to note on this slide which shows both pre-invasive cancer and metaplasia, for here alone can one see the true differences. The next slide (Figure 23) shows a section taken from the uterus after removal which shows where the biopsy had been removed, this being granulation tissue, and the epithelium is growing back over that area, coming back as pre-invasive cancer. It is interesting to note that in this particular instance there is no evidence of a surface or basement membrane. If such a membrane exists, then this would certainly be more susceptible to invasion. It is fortunate that her uterus was removed. I think Dr Pund brought out these points in the pathogenesis sufficiently.

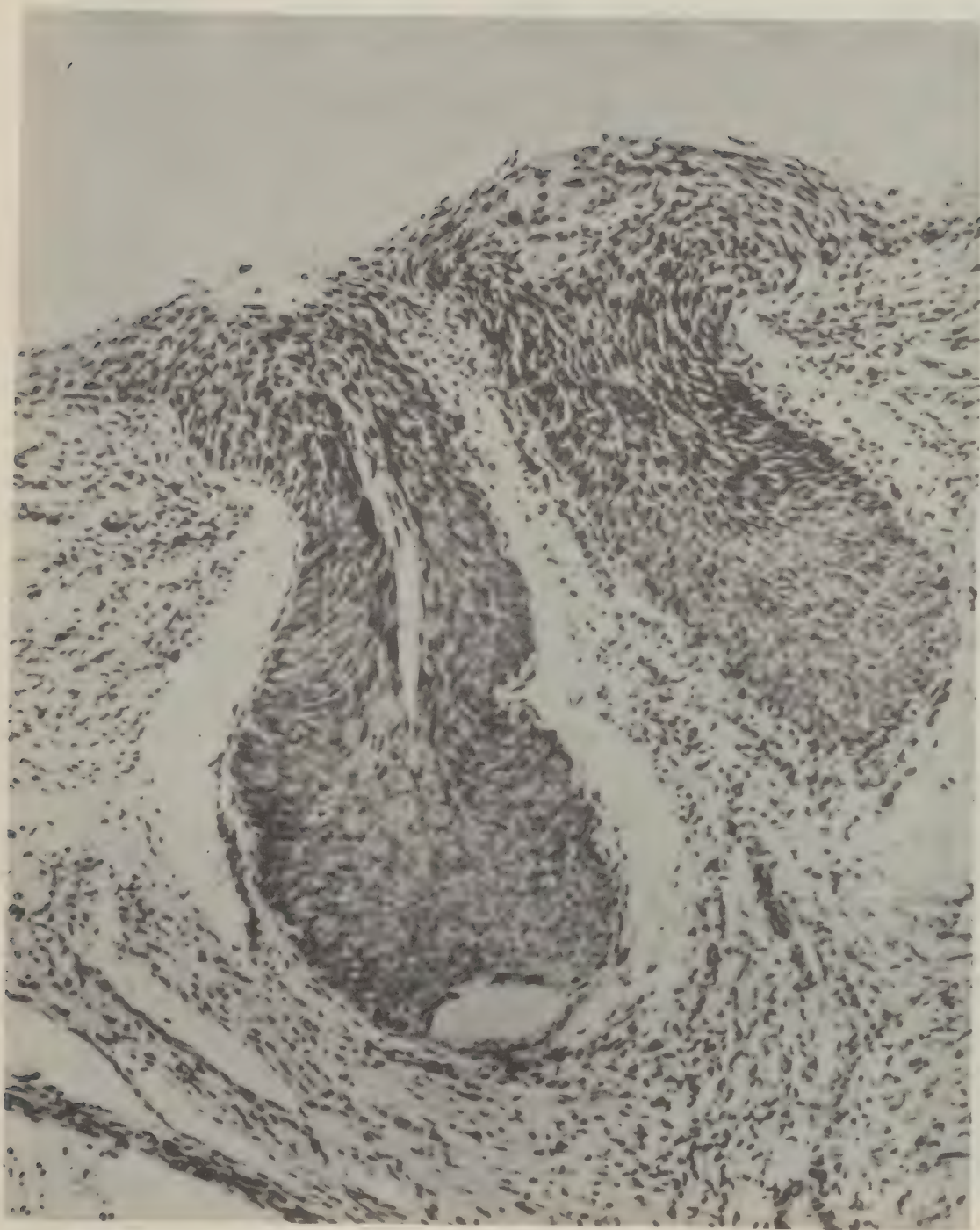


Figure 20. Pre-invasive Cancer, Reserve Cell Type.



Figure 21.

Squamous Cell Metaplasia.

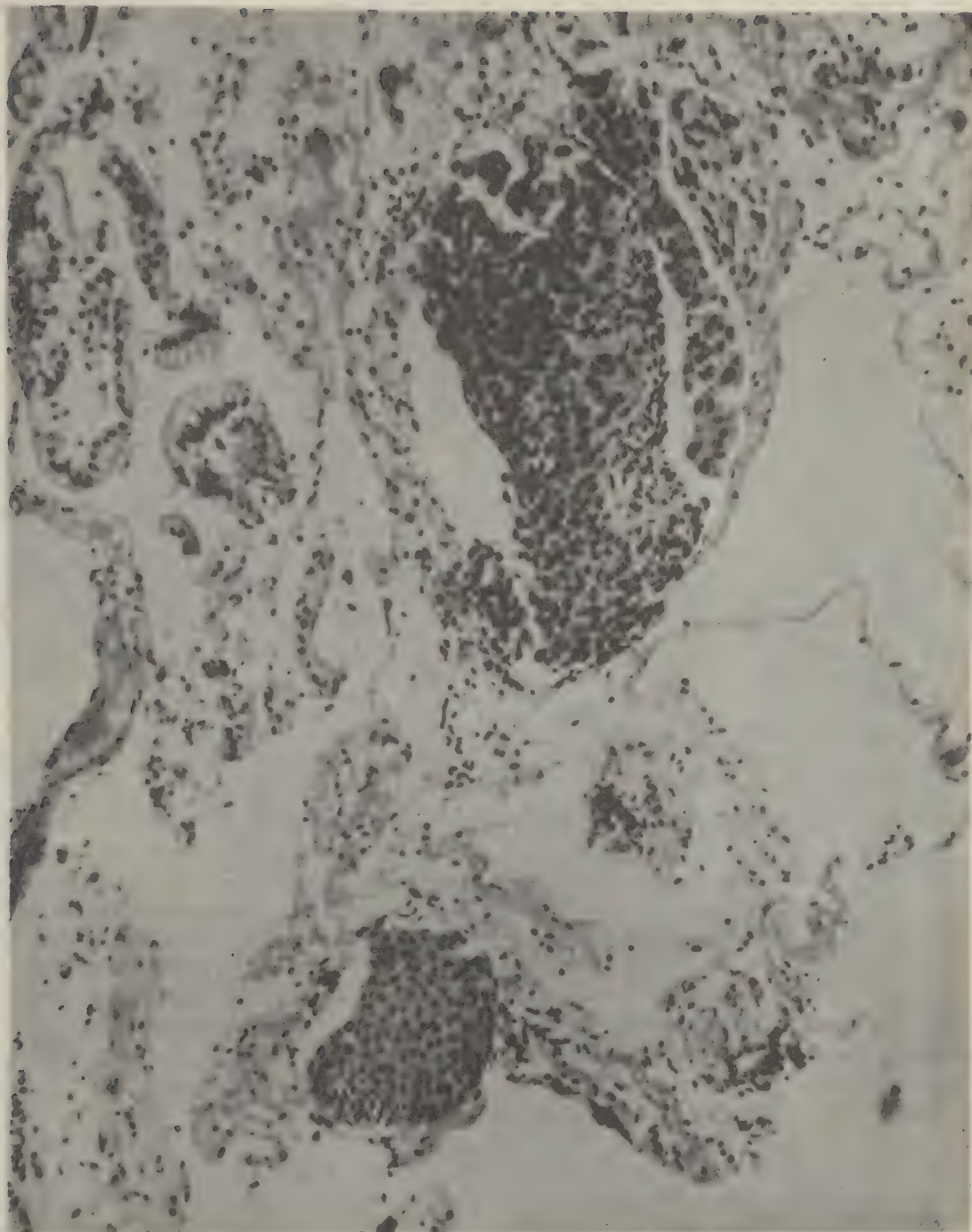


Figure 22.

Endocervical Scrapings Showing
Metaplasia and Pre-invasive Cancer.

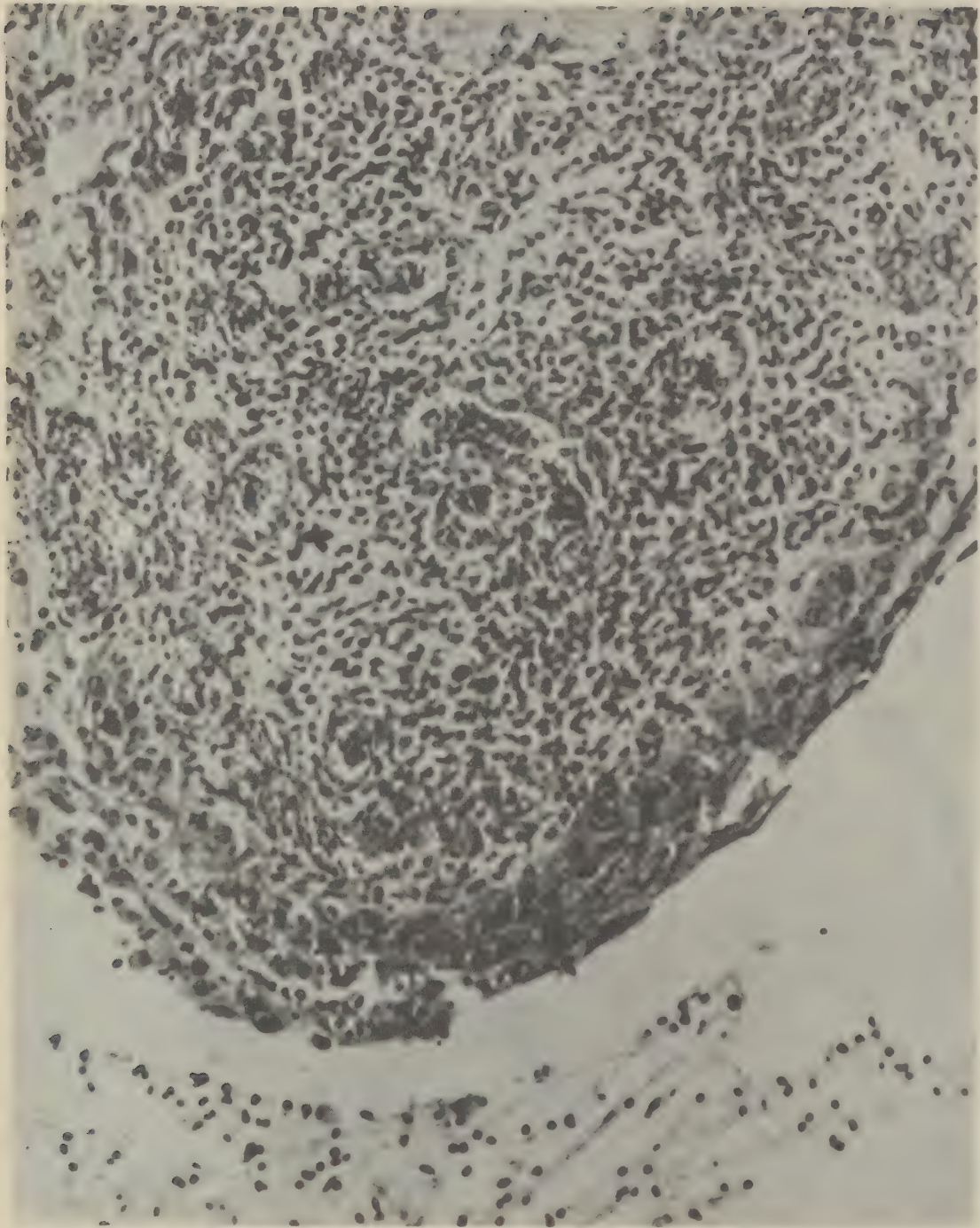


Figure 23. Section from Uterus Showing Epithelium Growing Over Area of Biopsy, as Pre-invasive Cancer.

The next case is a 50 year old white female who was three years past the menopause and had symptoms of bleeding. A D & C showed one small sliver of pre-invasive cancer and no more (Figure 24). It was not certain whether this one sliver represented menopausal changes, so a letter was written to the submitting station requesting that before any other procedures be carried out that they biopsy the cervix and re-scrape the endocervix. By return mail, we received the uterus which had been removed without further study. Sections from the uterus showed pre-invasive cancer confined to the natural surface and extending down into the glands. This case demonstrates inadequate study prior to hysterectomy, for the surgeon did not consider whether the patient had a covert invasive cancer, as Dr Fund has so well shown you may exist and cannot be seen or felt.

The next case is a 35 year old white female who had vaginal bleeding. She had four years previously had a bilateral salpingectomy and supravaginal hysterectomy which was removed because of painful intercourse accompanied with intermittent vaginal pain. This patient had her cervical stump removed and this slide (Figure 25) shows sections of pre-invasive cancer. This illustrates that had adequate study been made prior to her hysterectomy four years previously that this may have been detected then and a complete hysterectomy performed at that time. It also illustrates the necessity of careful examination before a hysterectomy and how repeated surgical procedures may be eliminated if this is done.

The next case is a 32 year old white female who complained of menorrhagia. Physical examination was negative except for a lacerated cervix. The biopsy of the cervix as shown on this next slide (Figure 26) showed questionable pre-invasive cancer. A second biopsy of the cervix was requested but, in place of carrying out further studies, a hysterectomy was performed. The sections as shown in this next slide (Figure 27) are pre-invasive cancer. This again illustrates that the surgeon did a blind hysterectomy in that he did not consider that a covert invasive cancer may have been present.

The next case is a 35 year old white female who had weight loss, positive pelvic findings consisting of pelvic adhesions, a mass on one side and a fixed uterus. A single biopsy of the cervix was taken which shows on this slide (Figure 28) as leukoplakia. This is very much like the one Dr Fund showed you a while ago with basal or reserve cell proliferation with the keratinizing flat nuclei on the surface that is consistent with leukoplakia. Additional studies were requested so the patient was admitted to OGH. The next slide (Figure 29) shows the cervical smear positive for cells characteristic of cancer. On the basis of the first biopsy and the positive smear, another cervical biopsy was obtained as well as endocervical scrapings, both of which showed (Figure 30) the presence of pre-invasive cancer without any

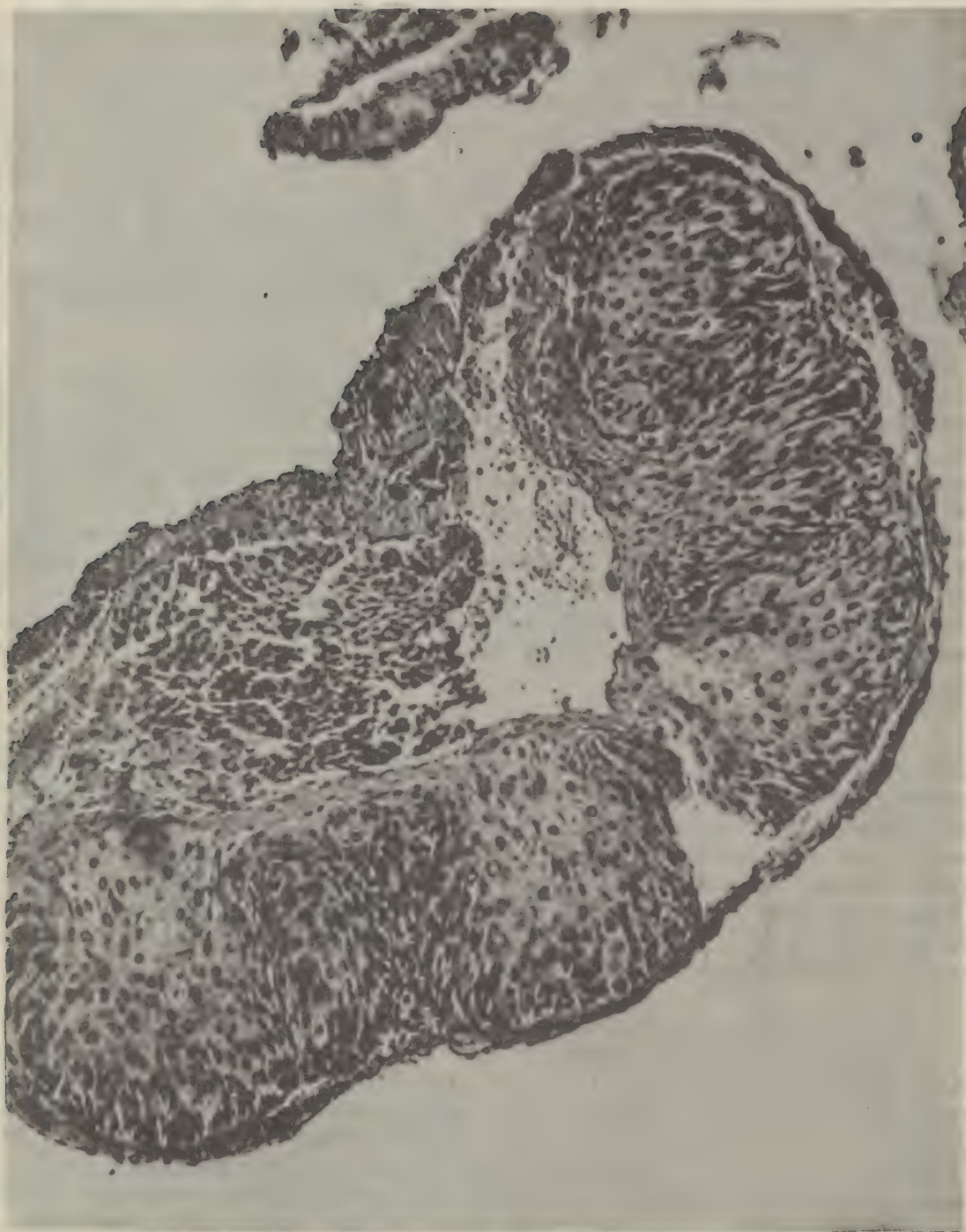


Figure 24. Scraping Showing One Small Sliver of Pre-invasive Cancer.

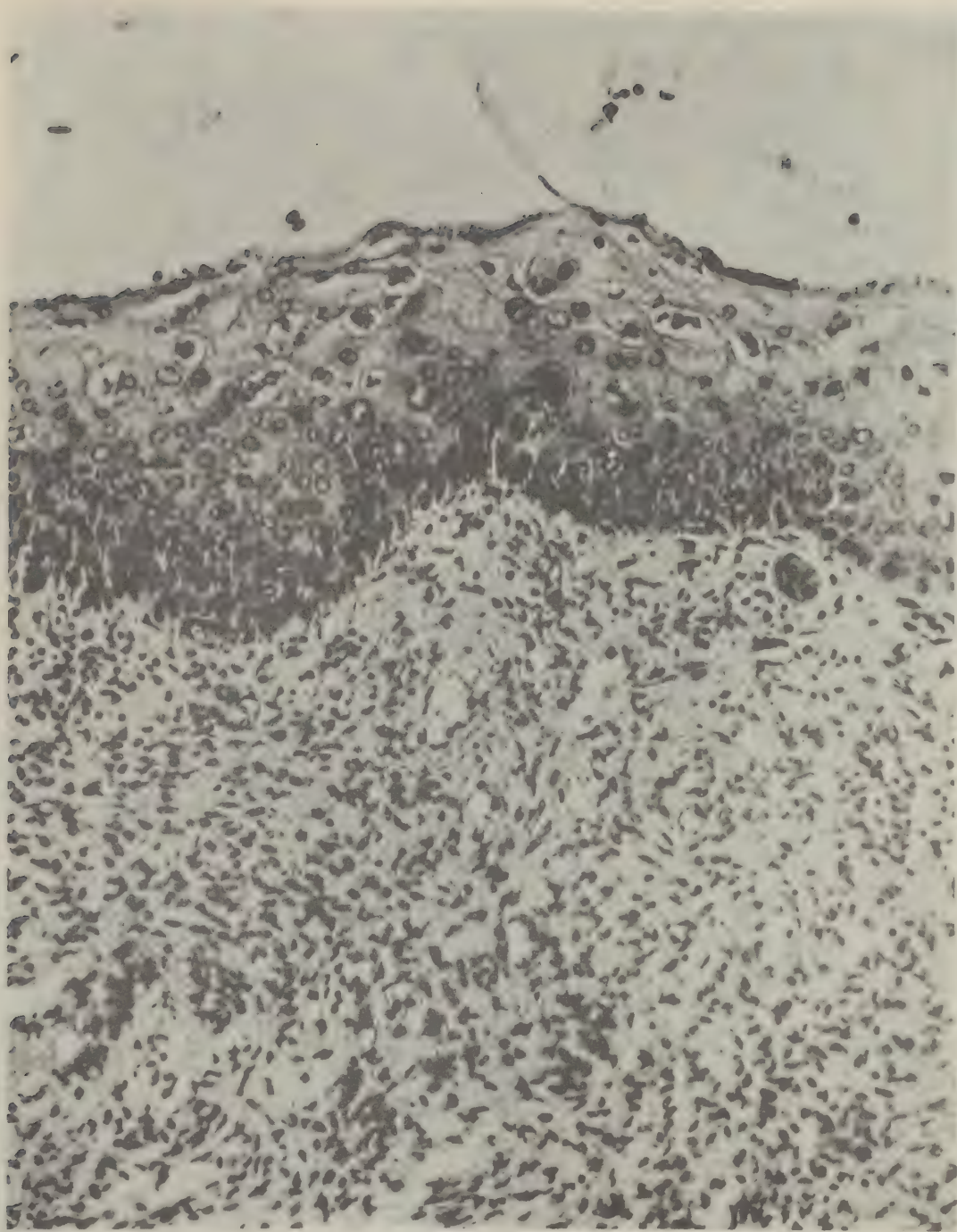


Figure 25.

Cervix Showing Pre-invasive Cancer.

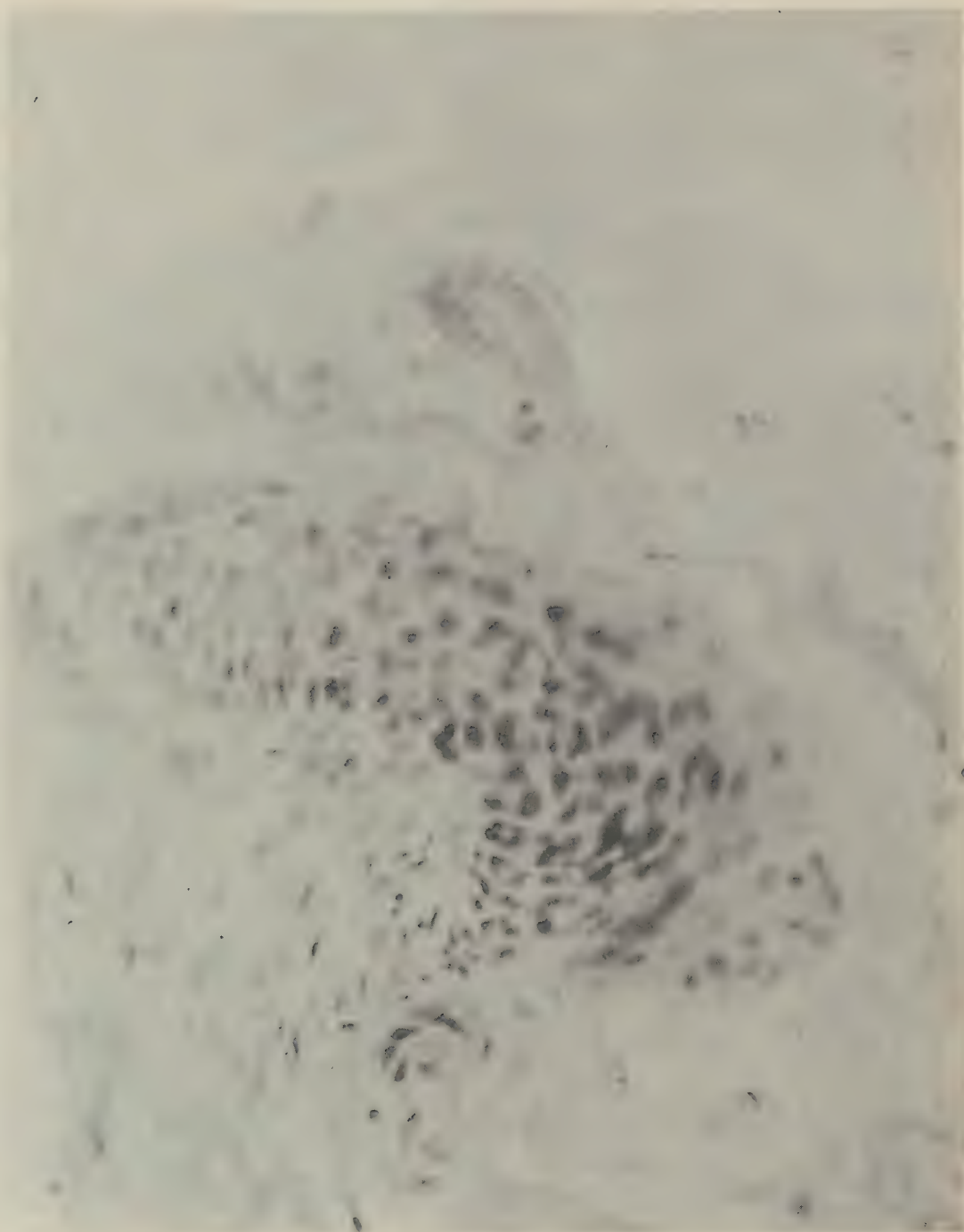


Figure 26. Section of Cervix Showing Questionable
Pre-invasive Cancer.



Figure 27. Section of Cervix Showing Pre-Invasive Cancer. H.P.

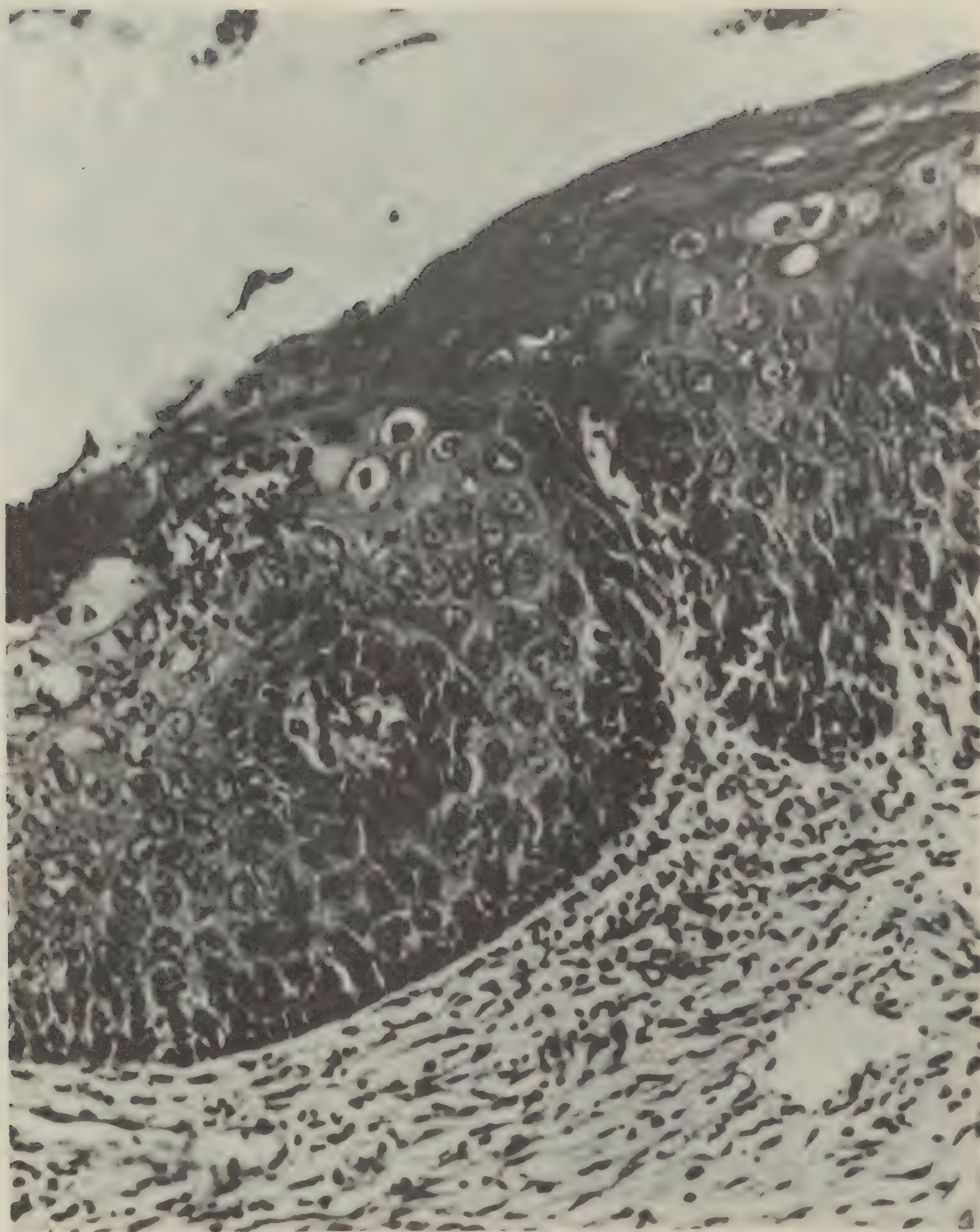


Figure 28.

Biopsy of Cervix Showing Leukoplakia.

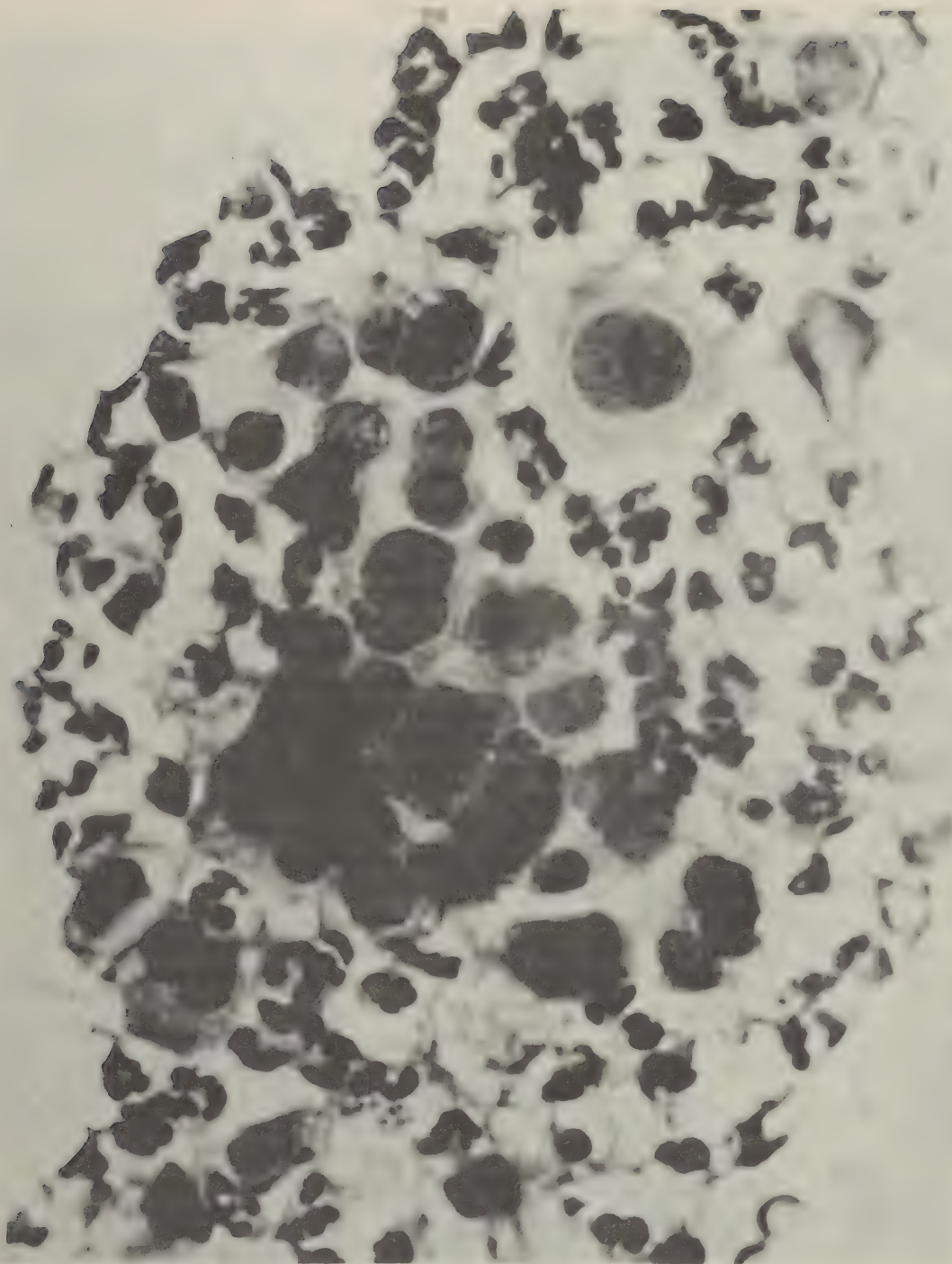


Figure 29. Cervical Smear Positive for Cells
Characteristic of Cancer.



Figure 30. Biopsy of Cervix Showing Presence of Pre-invasive Cancer Without Any Evidence of Invasion.

evidence of invasion. Hysterectomy was advised and performed, and multiple sections taken from the cervix showed on some sections pre-invasive cancer, while on others no evidence of any significant change. This case illustrates the value of taking multiple biopsies as well as cervical smears.

The next case is a 25 year old white female who had a chronic cervicitis. She was seen in the Gynecology Clinic on a routine check at which time cervical smears were taken which showed cells which we see in Figure 31 that were characteristic of cancer. A biopsy was recommended which showed pre-invasive cancer that was still confined to the natural surface and had completely filled the gland so that it may be mistaken as invasive cancer. The Figure 32 shows sections from the endocervical scrapings which present the same picture of pre-invasive cancer without evidence of any invasion. Hysterectomy was advised and carried out which confirmed pre-invasive cancer. This patient may be considered cured of her cancer and shows the proper technique in carrying out studies from the time the patient is first seen until she is operated on. These steps are cervical film with detection of cancer cells, confirmation by cervical biopsy by finding pre-invasive cancer, absence of invasion as seen on endocervical scrapings, and final confirmation by removal of the uterus.

The next case is a 33 year old white female who had vaginal bleeding, painful intercourse and cervical erosion. Routine cervical film showed cells characteristic of cancer. Biopsy of the cervix showed leukoplakia, whereas the endocervical scrapings showed pre-invasive cancer, reserve cell type. On the basis of these findings, a hysterectomy was advised and (Figure 33) shows pre-invasive cancer. This illustrates that one may have a negative cervical biopsy and a positive endocervical scraping which, of course, confirms the cervical smear.

The next case is a 24 year old female who was seen in Gynecology Clinic as a sterility problem. She had had children by a previous husband, but none by this marriage. On routine examination, cervical smear showed cells characteristic of cancer. A biopsy of the cervix showed pre-invasive cancer without evidence of any covert invasive cancer on endocervical scrapings. A hysterectomy was performed confirming the previous findings and this illustrates the correct handling of a case.

The next case is a 32 year old white female who had salpingitis and on routine gynecology examination cervical smear showed cells characteristic of cancer. Biopsy confirmed pre-invasive cancer and endocervical scrapings showed no evidence of a covert invasive cancer. Hysterectomy was performed and confirmed these findings. This again illustrates the correct handling of a case.

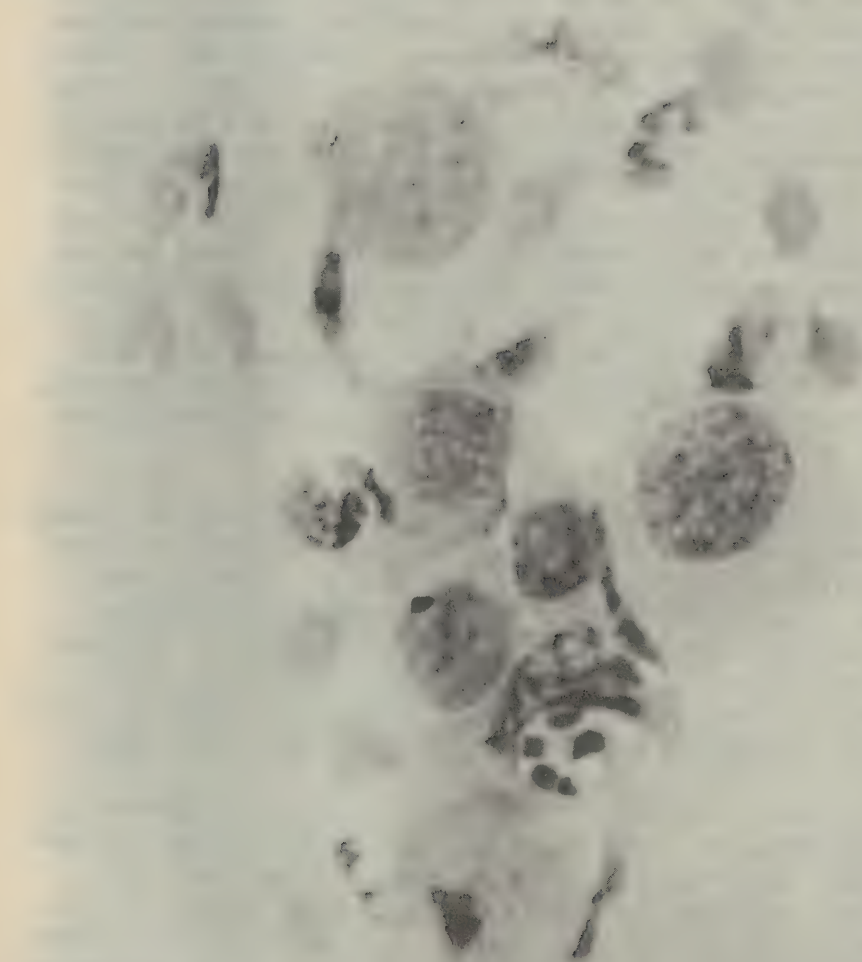


Figure 31. Cervical Smear Characteristic Cancer Cells.



Figure 32. Endocervical Scrapings Showing Pre-invasive Cancer.



Figure 33.

Pre-invasive Cancer.

The next case is a 47 year old white female who was in her menopause and complaining of vaginal bleeding. Physical examination was negative which also included the cervix. Her cervical smear detected cancer cells. Biopsy of the cervix and endocervical scrapings showed a covert invasive cancer which we see on this next slide (Figure 34). This is important for it must be remembered that this invasive cancer could not be seen or felt on physical examination. This patient was selected for operation, but is being treated by radium.

The next case is a 43 year old white female who had a chronic cervicitis. Routine physical showed no evidence of any significant findings. Cervical film showed cells characteristic of cancer. Biopsy of the cervix and endocervical scrapings confirmed the cervical smear but showed it to be a covert invasive cancer. This case illustrates how the cervical smear may detect an unsuspected covert invasive cancer. She is also being treated by radium.

The last case is a 36 year old white female who was admitted to the Medical Service for a pleural effusion. She is still in the hospital. On routine physical examination, a cervical film detected cancer cells. A biopsy of the cervix and endocervical scrapings showed pre-invasive cancer. However, until this patient is in better condition medically, she will be followed by cytologic smear and biopsy before her hysterectomy will be performed.

At this time I would like to thank Dr H. E. Neiburgs for his kind help in reviewing our slides on exfoliative cytology. As you know, he is one of the few experts in the country on this subject and at the Annual Convention of the American Medical Association this June he is reading a paper on 10,000 cases that he has studied. This will also appear in the Journal of Obstetrics and Gynecology in July of this year. His help along with Dr Fund has been most invaluable. I hope that this talk will give you some idea of the problem as well as the pathogenesis and what we think is the proper manner in which these cases should be handled. It has been a pleasure to be before you this afternoon and I thank you very much.

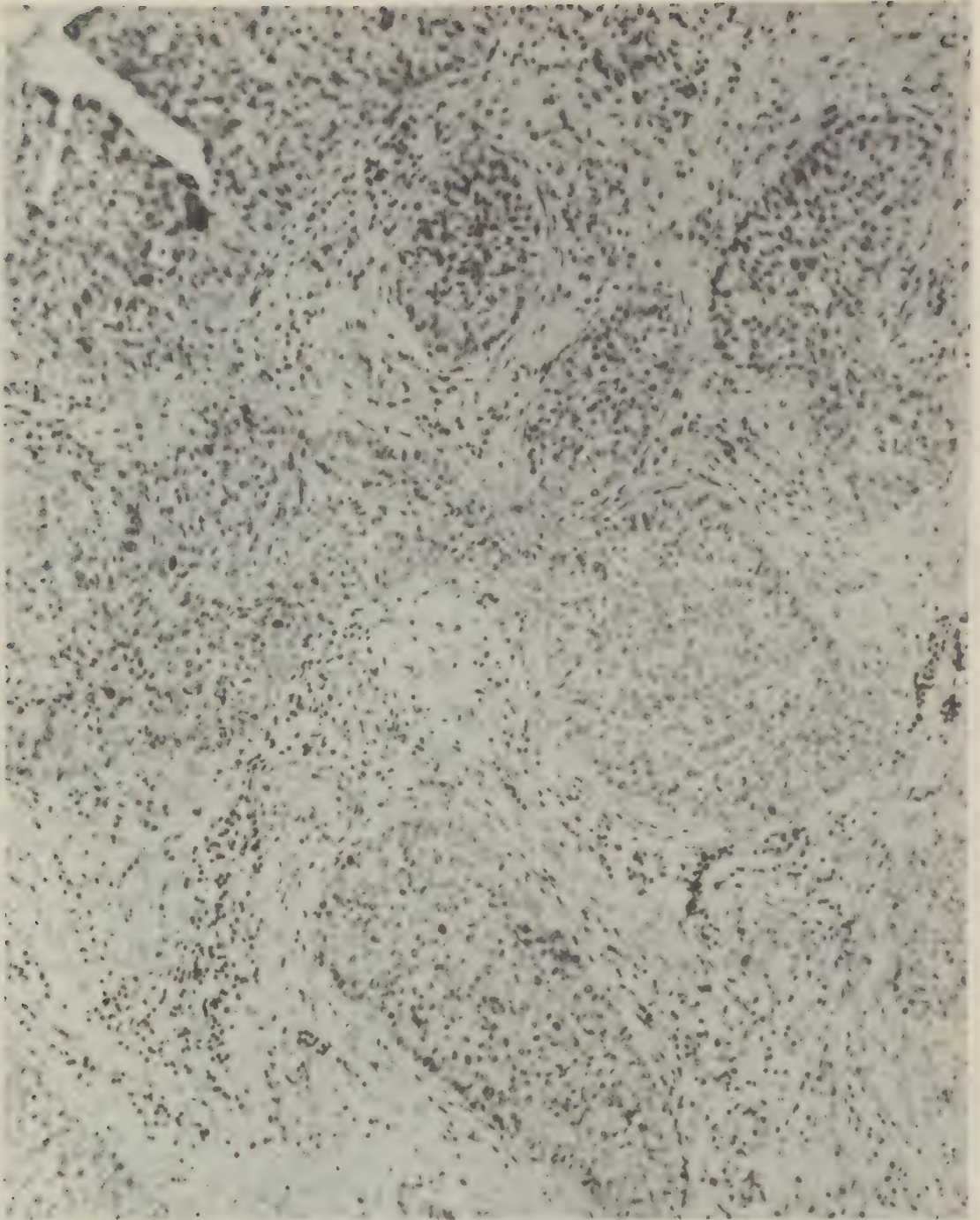


Figure 34. Covert Invasive Cancer of Cervix.

CLINICO-PATHOLOGIC CONFERENCE

CONDUCTED BY: COLONEL CHARLES L. LEEDHAM, MC

Chief, Medical Service, Oliver General Hospital
Augusta, Georgia

COLONEL LEEDHAM:

I think we can call this meeting to order. I'll describe how we conduct our Clinico-Pathologic Conferences. On Friday or Saturday of the previous week we print the protocol and distribute it to all of the staff. We hope over that week-end that the doctors have read and studied the case for diagnosis. On Thursday, everyone turns in a slip with their tentative diagnosis, and those diagnoses are tabulated on the back of this board. This board will be turned around at the appropriate time so we can see how they voted.

At the beginning of our meeting one of the residents or interns is chosen to discuss the case. He spends about fifteen minutes on his pros and cons, giving his reasons, and attempts to arrive at a diagnosis. For the next fifteen minutes, we call on the members of the resident and intern staff to discuss the case further. Another 15 minutes, that is, for 30 to 45 minutes, the whole staff participates; instruction staff, visitors etc. During the last 15 minutes we get our answer. Instead of limiting the second 15 minutes to our residents, we are going to open it to everyone for discussion; we will vary our normal procedure a little bit that way. Toward the end of the 45 minutes, the board will be turned around and someone will discuss the different diagnoses as they appear on our board. I think it will be Dr Sydenstricker this morning. He usually closes the discussion for us, but prior to that, someone else has generally run the differential down. So, with these brief remarks, I'll turn the conduct of this conference over to Colonel Blumberg, our Pathologist.

I will now read the protocol, an advanced copy of which has been furnished all of you:

PROTOCOL

CLINICO-PATHOLOGIC CONFERENCE

Laboratory Service, Oliver General Hospital

"Patient is a 27 year old white female who was admitted to the hospital on 15 March 1949 and died at 1935 hours on 1 April 1949.

Chief Complaint: Weakness of the lower extremities accompanied with nausea, vomiting and fainting spells all of which are two weeks in duration.

Family History and Past History: No record of occupation, habits, operations, injuries or childhood illnesses.

Systems Review: Patient has had generalized aching, malaise and fatigue; no headaches, no previous eye symptoms, no tinnitus or deafness; no cough, hemoptysis or dyspnea; denies any food intolerance or other GI symptoms. Her menses are regular, last five days; LMP date not obtained. Denies venereal disease. Patient also had difficulty extending her elbows bilaterally or making of closed fists with either hand because of limited motion from contracture. This supposedly followed rheumatic fever two years ago. No joint effusion but patient complains of her elbows and hands aching.

Present Illness: On 2 March 1949 the patient developed aching in the right leg in the region of the thigh. On 5 March it became intermittent and she denied any injury. She returned to work and two days later while walking both legs became weak and numb, and she almost fell. This lasted a few seconds, disappeared, but the leg aching continued. Later that day while boarding a bus she became weak, faint with blurred vision for about ten minutes. She then felt better, went home and cooked dinner but became nauseated and vomited. This was one week before admission. Two days later she was seen by the outpatient doctor for these symptoms and received APC's. That night she had additional fainting spells, dizziness accompanied by nausea and vomiting accompanied with pain in her right side. The next day she was seen by the outpatient physician who gave no specific therapy but made some vaginal smears for Neisseria and blood tests. Two days prior to admission she noticed upon awakening that her face felt drawn on the left side and that she could not close her left eye. She had some difficulty with her vision in that focusing seemed difficult for several days. She returned to the hospital on 15 March and was admitted for observation.

Physical Examination: Temperature 97.8; pulse 72; blood pressure 112/82. Weight not recorded. Examination revealed a well developed, poorly nourished, chronically ill white female who was nauseated, vomiting and not mentally alert. History was obtained with difficulty as she was vague on many of her symptoms and chain of events. Hair was of good texture; no stiffness of neck; no lymph-adenopathy; thyroid not enlarged; trachea in midline; pupils reacted to light and accommodation; EOM normal; sclerae and conjunctivae clear; fundi inadequately examined because of lack of cooperation but discs appeared to be well outlined with no significant abnormalities noted; ears normal; nose normal; oral hygiene good; tongue protrudes slightly to the right; tonsillar beds clean, no injection of throat; teeth in good repair; chest normal; breasts showed no masses or tenderness; lungs clear; heart not enlarged, no thrills or murmurs, rate and rhythm regular, first mitral sound harsh and split; abdomen showed marked tenderness in both lower quadrants, more marked on the right when some voluntary muscle spasm. No palpable masses or organs; tenderness in epigastrium on deep palpation. Rectal and pelvic deferred due to patient's condition. No bony abnormalities of back; no tenderness along spinal column. Extremities showed no evidence of abnormalities of effusion. The upper extremities revealed contracture deformity of the elbows of 10 degrees with inability to make a complete fist without the help of each hand. The hands have a bluish tinge but the fingernail beds are pink. Hyperactive reflexes in the upper and lower extremities on the left. Deep tendon reflexes in the right lower extremities are practically absent. No Babinski, Chaddock or Oppenheim. No sensory changes noted by the patient. Reflexes were present in the right upper extremities but not as active as on the left. Abnormal reflexes on the left were absent, active on the right. There was a left facial paralysis without definite loss of sensation, manifested by inability to smile, wrinkle forehead or close the left eye lid. Skin appeared somewhat dry, pale with no pigmentation. Romberg was positive with a tendency to fall backward and to the left. Tendency to a mild, lateral nystagmus was noted.

Laboratory Studies: X-Rays - AP and lateral films of the skull on admission revealed nothing. The pineal gland was calcified but in its usual location. X-rays on both elbows with AP and lateral showed the carrying angle of the arm to be somewhat disturbed, although the joint spaces were of normal width. No abnormalities were noted about the elbows. Lumbar spine, AP and lateral, were normal. Admission chest x-ray, portable, showed some hazy mottled density over the left lower lung field which would be compatible with a diagnosis of bronchopneumonia. The remaining lung fields showed some increase in the bronchovascular markings but no evidence of confluence. The hilar shadows were slightly prominent and the

heart appeared normal in size. The diaphragm was smooth. AP and lateral of dorsal spine were normal. AP and oblique of both hands revealed no abnormalities. A portable x-ray of the chest on 25 and 31 March showed no changes from the first x-ray. Flat plate of the abdomen on 25 March showed a Levin tube in the stomach with little gas in the bowel and the entire abdomen presented a hazy appearance which may be due to fluid in the peritoneal cavity.

Admission urine - Specific gravity 1.028 negative albumin and sugar, alkaline in reaction and microscopic with many leukocytes. Fishberg concentration: specific gravity to 1.028. Admission blood count showed leukocytes 6,700 erythrocytes 3.28, Hb. 13.2 gms, neutrophils 69%, lymphocytes 31% with sedimentation rate of 55 mm., corrected to 32 mm, and hematocrit of 31%. NPN 26 and blood sugar 105 mg.%. Vaginal and cervical smears taken prior to admission from the vagina, cervix and Skene's glands on request for Neisseria or other organisms showed the usual bacterial flora without any specific organisms isolated. Many pus cells were in all smears. Kahn negative. Repeat urines negative except for leukocytes in microscopic. On 22 March total protein 5.8, chlorides 440. Cisternal puncture on 22 March showed a cloudy fluid with a cell count of 575, 64 polys and 36 lymphocytes; total protein 375 mg and a 4/globulin. Pellicle was present in fluid; colloidal gold curve 5554442211 and Wassermann negative. Bence-Jones protein on urine negative. Later blood counts showed no significant changes until 24 March leukocytes 13,100 with 85% neutrophils (21 band forms), Hb. 13.8 grams, corrected sed rate 41 mm, hematocrit 37%; total protein 5.7 with albumin 3.5 and globulin 2.2. Culture of cisternal puncture showed no growth. Sputum culture and smear negative for acid fast organisms and fungi. On 25 March, CO₂ was 54 volumes%, chlorides 470, NPN 24, On 29 March white count 12,500, Hb. 14.8 gms., erythrocytes 4.2 with 79% neutrophils (7 bands). Blood count on 31 March unchanged. On 23 March blood submitted to the Department of Virology in Washington with request for virus studies. Report after death showed the specimen positive in diagnostic titer for complement fixed anti-bodies of mumps. EKG on 21 March was normal.

Consultations: EENT consultations throughout course were normal. No fundic changes. The eyes did not move except on occasional slight motion of the right. The pupils were round and equal and did not react to light on 23 March 1949. Picture was one of total internal ophthalmoplegia, total external ophthalmoplegia in left eye and almost complete external ophthalmoplegia of the right eye. It was suggested that involvement may be in the region of the pons and to rule out tumor, hemorrhage, syphilis or multiple sclerosis.

In neurologic consultation on 19 March revealed patient to be almost completely blind in the left eye, pupils not reacting to

light or accommodation. The examiner thought that the left optic disc appeared to be somewhat atrophic. All extra ocular muscles of the left eye, with the exception of the lateral rectus did not function. The cornea reflex was markedly diminished on the left and a diminished pin prick perception over the left half of the face. The face was shiny, reddish and the skin felt taunt. There was complete left facial paralysis, with tongue deviating slightly to the left. Deep reflexes were present, but diminished, in the upper extremities and absent in lower extremities. Left abdominal reflexes were absent; diminished muscle strength in upper extremities with both legs weak, particularly the right; questionable diminution of pin prick perception over right half of body. She was lethargic, and aroused without difficulty and fairly well oriented.

An electroencephalogram on 21 March showed a dominant rhythm showing a very poor alpha rhythm. Impression was an abnormal fast EEG with no definite focus, but merely a suggestion of more abnormality stemming from the left hemisphere.

Gyn consultation was deferred at request of Medical Service until patient showed some improvement. She expired before this was done.

COURSE IN HOSPITAL: A spinal tap was performed on second day of admission, was bloody and counts were similar to peripheral blood, pressure not elevated. Repeat spinal tap the next day, 18 March, revealed no change. In all, five spinal taps were performed, the last time by the neurologist, and all showed blood, the counts of which were similar to peripheral blood. It was not felt at any time that the spinal canal had definitely been punctured, although it was felt on two occasions that this was possible. After five days of hospitalization, nausea and vomiting became less. She was maintained on intravenous fluids, high vitamin content, and protenum feedings to maintain protein balance. For ten days following admission the temperature was not elevated. There was no headache or nuchal rigidity and blood pressure was at normal levels averaging 120/80. On 26 March her temperature began to rise up to 101 and 102 and she developed nuchal rigidity. She never complained of headache and her sensorium remained clear enough to recognize people and to remember her name. She was unable to remember where she lived and what hospital she was in. Five or six days following admission she began to have difficulty in speaking and swallowing which progressed gradually. On 24 March she complained of pain in both lower quadrants of the abdomen which was tender to palpation but showed no spasm or rigidity. She was placed on Penicillin on 22 March, 100,000 units stat with 50,000 units q3h. On 24 March

streptomycin was started, 1/2 gram four times daily. Penicillin was increased on 25 March to 100,000 units q3h. She remained restless, became incontinent, complained of pain in her lower abdomen, continued to vomit and given demorol, codeine and sedation. On 30 March it was noted that she had large amounts of thick yellow discharge from her vagina which became heavier until expiration. On 30 March, the night nurse noted that the discharge appeared to be pus from the vagina and that material brought up from her lungs was also purulent in its characteristics. On 28 March she continued to complain bitterly of pain in the Pelvis. Temperature was elevated to 104 and she was gradually going downhill. On 1 April her temperature gradually climbed to 107.2 at noon; her pulse became poor. Eight ounces of urine was obtained through the Foley catheter which had been inserted three days prior. On 1 April at 1830 hours the temperature was 107.4, pulse could not be palpated, respirations 25 to 30, deep and rapid, and the patient made a few purposeless movements. There was no cyanosis noted. The blood pressure was 65/0 and about 1930 hours the respirations became shallow and stopped. She was pronounced dead at 1935 on 1 April 1949.

NOTE: She received eight million units of Penicillin from 22 March to 1 April 1949 and 18 grams of Streptomycin from 24 March to 1 April 1949."

Since the time this history was written from the hospital chart, I was informed by the Outpatient Department physician that I have omitted some of their records. I didn't know they existed and I think Captain Kunkel, if he is here, will explain briefly any fill-in history which was omitted. If it was, it was inadvertently omitted and I'm very sorry.

CAPTAIN KUNKEL:

This patient, according to the protocol, was seen on the 9th of March and received APC's. The first time the patient was seen was on the 11th of March. At that time a complete physical examination was done which was relatively negative except for the abdominal findings which showed a lower abdominal tenderness and what was diagnosed as pelvic inflammatory disease. She received 500,000 units of penicillin that day, and 300,000 units in beeswax. The next day she was seen only by the nurse and received 300,000 more units. I just wanted to get up and explain that because according to the protocol, it might be concluded that the type of medicine the out-patient department practiced was not of the highest standards.

COLONEL BLUMBERG:

Incidentally, those of you who were present at the autopsy on this patient, I'll ask to refrain from giving the autopsy findings until we have presented them. And then, I'll also ask those who have gained information through Dr Rund at the University, to refrain from giving the diagnosis. It's obvious why. Our cases here are for diagnosis rather than a seminar and we prefer to keep them on a diagnostic plane. I'll ask Dr Hammill to come up and start the discussion on this case. Dr Hammill is one of the interns, I think, at present on the Surgical Service.

DR HAMMILL:

When this patient was first seen by us clinically, her diagnosis was just about as confusing as I am sure it is to you right now. I didn't have the patient but I saw the case several times. We thought she presented a picture of an encephalitic diffuse process. Later on, it was rather obvious and even more so after reading the complete records that this was not the case. It left one with several entities that tie together. First of all the neurologic findings and then the diffuse abdominal findings as well as the findings in her lung. Now, going on to the lung first, we are rather sure from the x-ray pictures that there is a bronchopneumonic reaction. As far as her neurologic picture goes with its onset in the lower extremities ascending on definite cerebral involvement of a diffuse nature, I don't believe one could postulate one entity covering the entire picture. Her spinal fluid findings were compatible with a process that might be on an infectious basis but not of a pyogenic nature although it was just as likely that the process could be on a mass lesion basis. There are still certain facts in the case that can't be tied into one picture, but I think for the present time the best diagnosis would be one of a brain tumor. When we come to brain tumor we have to pick two entities. Is it primary or is it metastatic? Due to the age of the patient one could get just as much a diffuse picture as this from a fulminating primary type tumor as one of the glioma group or as far as other mass lesions go, it could be multiple diffuse abscesses. However, her systemic reaction in terms of peripheral count, febrile response, which did not exist until terminally, would lead one to discount that. The only diagnosis, which is not a very definite one, that I could make on the case would be that she had a brain involvement from metastatic lesions, primary site of which I am not too certain. I certainly would like for the x-ray department to mention something about these lung findings.

COLONEL BLUMBERG:

I understand Dr Levy will present the x-rays.

DR LEVY:

Since Dr Hammill is primarily interested in the skull at this time we have an AP and lateral skull that was taken the day after the patient's admission and from this examination we were not able to gather any further information. We do have a skull with normal bone, the density and thickness is normal. We have a calcified pineal body which appears to be in its normal position. The sella tursica appears normal and throughout the skull you cannot find any abnormal calcifications. There was one area of decreased density which you see right here which we felt was due to a vein rather than a bone lesion. We have a number of other examinations taken the day after admission. We have films of both elbows. All we found here was some slight increase in the carrying angle. The joint space is approximately of normal width and the articulating surfaces appear smooth. There was no evidence of any soft tissue lesion on these films. On the same date, we had the hands and wrists x-rayed and there was some loss of calcification as you see throughout. None of the joint spaces were destroyed. Each of the spaces were easily identified and no irregularity in the articulating portions was seen. No punched out lesion of any type could be made out. On the same date, we have a dorsal and lumbar spine and each of the vertebral bodies appear smooth in contour. The intervertebral spaces are of normal width. The density of the bone is approximately normal. The curvature of the dorsal spine and of the lumbar spine is normal. There was one question about slight irregularity seen in the scapular on the right but we were unable to pin any definite diagnosis on a thing like that because it is so vague. It is just slightly irregular through that region. Nothing of any great import could be found on these films.

COLONEL BLUMBERG:

Are there any other x-rays?

DR LEVY:

I left these for last purposely. We have one flat-plate of the abdomen showing the Levine tube in the stomach and a general overall haziness of the abdomen. We felt that this may have been due to fluid but we were not sure. We had an admission chest on 16 March which was essentially negative. There was no evidence of any infiltration

in the lung fields, no thickening of the pleura, the costal phrenic angles were clear. There was no bone lesions. The hilar shadows I don't think are too prominent. We had two other chests. One on 25 March and one on 29 March. We did interpret this mottled density in the left lower lung field as due to broncho-pneumonia, the etiology of which is unknown. There is some slight enlargement of the hilar shadows. On the 29th, you don't see the same density but that may be due to slight movement on the part of the patient or inspiration or expiration at the time of exposure which may have just blotted out that density. You do get the impression that there is some sort of mottled density up the right upper lung field on these films.

COLONEL BLUMBERG:

Dr Levy is resident in Roentgenology here at Oliver. Are there any questions anyone wants to ask him pertaining to x-rays? Is there anyone else then who wishes to volunteer any opinions in this case, either some of the men who had it or any of our guests.

LIEUTENANT COLONEL DOWMAN:

I don't think I would explore this case. My feeling was that in this case if you're going to try to wrap it all up in one nice little bundle, that obviously the patient had a meningitis and a complete spinal block. They tried to needle this lady's back four times including the neurological consultant and all they got was blood. The spinal fluid was 575 cells, cloudy fluid, total protein 375 mgs., increased globulin, gold curve and so forth. That to me, sounds about as much like tuberculous meningitis as anything else. With all the abdominal complaints, you wonder whether she might not also have had some tuberculous peritonitis. In the chest films, I didn't see any bone complexes. It certainly doesn't look like any sweeping military tuberculosis from over across the room. Multiple cranial nerve palsies, the off findings of no one single location point for any kind of tumor, certainly, to me speak more for a meningitic process around the cranial nerves. All the eye nerves were pretty well paralyzed, including the optic nerve. Later, the neurologic consultant felt she had secondary optic atrophy. She was obviously pretty close to blind so that I'd put my chips on the tuberculous aspects.

COLONEL BLUMBERG:

Is there anyone else who has any other viewpoint they would like to express?

DOCTOR HAYES:

I shook my head at brain tumor when Dr Dowman was discussing the case. It seemed to me that the spinal fluid findings tie in with those of tuberculosis but I am in doubt about tuberculosis in the absence of lung findings. I haven't seen much pelvic tubal tuberculosis without some more definite involvement of the lungs. It seemed to me almost surely you people investigated the tuberculous angle further than what was on the chart. Haven't you done some other tests such as sputum tests or anything of that nature?

COLONEL BLUMBERG:

Everything that was done is on the chart.

DOCTOR HAYES:

This proceeding doctor doesn't know what the diagnosis was I take it.

COLONEL BLUMBERG:

I hope not. Colonel Bauchspies?

COLONEL BAUCHSPIES:

This case reminds me very much of a case that was presented by Dr O. H. Perry Pepper when I was a second year medical student. The neurological findings manifested by this case are similar to those of a patient shown to us as a typical case of tuberculous meningitis. There were several abnormal chest and abdominal findings including a draining appendectomy wound. Dr Pepper at that time concurred in the diagnosis with the exception that he thought that in a case so far advanced there should be some tubercle bacilli in the sputum. That case came to autopsy seven weeks after admission to the University Hospital. When the skull was opened the brain looked like split pea soup. No one had made the correct diagnosis. It was a case of actinomycosis. I offer it here as a possibility.

COLONEL BLUMBERG:

That's a good one. Colonel McLester from Birmingham, would you care to make any comments on this patient?

COLONEL McLESTER:

When I came in here I said my diagnosis was an ill-defined disease of the nervous system manifested by all of these things.

I think it's probably the best diagnosis we could make. That is, it fits whatever, it is. I rather suspect that Dr Downman is correct, but just to be different and mention it, she came in originally as probably a gynecologic problem. There was much talk about pelvic inflammatory disease. So just to be different let's say that she had an abscess in her pelvis. I'm not enough a gynecologist to say exactly where it might be but she could have metastatic abscesses in the brain and somewhere else. I think she probably had tuberculous meningitis, but just in case she had the other, let's get it on the record.

COLONEL BLUMBERG:

Thank you, Dr McLester. Is Colonel Bartlett here this morning?

COLONEL BARTLETT:

I'm surprised that there have been so few diagnoses suggested here. I thought there would be 30 or 40 different diagnoses. I made some notes here as I went through this record and the first thing I thought of was she had Meniere's disease and then I thought she had some kind of pelvic inflammatory disease. We have had a good many cases of this general character at our hospitals and they have fallen into the category of some virus infection. We are not good enough virologists to know what virus is causing it. I recall two cases similar to this at Coral Gables and I happened to be down here when this patient was in the hospital and also Dr Lenox from Boston was here and I discussed the case with him and tried to get him to come to the hospital to see the patient with Colonel Leedham, but he said that since this patient had not had any epileptic attacks he wouldn't come to see her. I think this is the type of case that lends itself very well to the type of Clinico-Pathologic-Conference that they put out here at Oliver and I think they have worked it out exceedingly well, especially to keep everybody quiet that knows the answer. That's usually the problem in our teaching hospital. The people on the staff already know the cause of death and it gets rumored around. I would like to throw in the general category of collagenous disease, a lupus erythematosus disseminatus or scleroderma; I haven't heard anyone explain these contractures of the arms. I'd like to throw in rheumatoid arthritis and since Dr Leedham said yesterday that they had a case of acute endocarditis that had not run any temperature, I'll throw that in too.

COLONEL BLUMBERG:

Thank you, Dr Bartlett. Is there anyone else that has some comments? Dr Zinker?

DOCTOR ZINKER:

First, before I pass any comment along on what I think the patient had, I want to give you a little more information that I have since I saw the patient while she was living. All the spinal taps that were done which numbered five or six were done by the resident in charge of the patient, myself and the anesthesiologist. Now, the first puncture that we did resembled venous blood and the first doctor that did it believed that he had entered the spinal canal subarachnoid space and when I did a tap, I was almost certain that I had entered the subarachnoid space and all I was able to obtain was about two drops of gross blood. At this time, the patient had no nuchal rigidity whatsoever and did not appear to have any meningitis. Her head was completely loose and flaccid, you could move her extremities without eliciting pain. In light of that, I decided the safest thing to do would be to recommend a cysternal puncture and we had a neurosurgical consultant and he agreed that that would be the thing to do. We brought her down to the operating room. The anesthesia department, before they did a cysternal puncture did a spinal tap again, at about the location we did. They obtained blood and it came out of there just like it was coming out of a vein. She just flowed back into the syringe and he was fairly certain he had entered the subarachnoid space. At that time the patient still had no nuchal rigidity. The cysternal fluid was the one in which the cell count and a protein were elevated, and then subsequent to the cysternal puncture, the patient developed nuchal rigidity and the question came up, did the puncture initiate the nuchal rigidity? Also the possibility at that time was entertained that the patient might have varicose veins of the spinal canal, in view of the fact that we were all able to obtain such a copious amount of blood. Now, I believe that possibly the initial complaints the patient had were of greatest significance, namely, the numbness and parasthesia of the inner aspect of the right thigh. That would make me believe that possibly some of her spinal roots were involved and then she went on to develop almost a paraplegia but the paraplegia was never as complete as it got to be after all those traumatic punctures. She also began to experience very bad pain. The patient was heavily sedated because she was in such excruciating pain complaining of terrific pain in the legs. At that time it was thought that possibly the pain was due to extravasation of blood from all these traumatic taps about the cauda equina and that confused the picture very much. The patient at all times was lethargic but she could be aroused and when aroused was fairly well oriented and appeared to know what was going on. She would answer questions reliably, she would differentiate from dullness, when asked she could do simple things like finger to nose, but she was never able to do heel to knee,

but finger to nose test she was able to do without any difficulty. In examining the legs you could notice that she had a marked weakness in both legs but almost complete flaccid paralysis in her left leg. She wasn't able to move it at all, she could slightly flex her toes, but in the right leg she had no movement at all. Then she had all these neurological findings of the cranial nerves on the left side of the brain, she had II, III, IV, V, VII, possibly X and XII, on the left side and then with the flaccid paralysis on her right side, I thought possibly it might be on an upper motor neuron basis, maybe at the very onset of it, and that made one think of the course of paralysis which could very well localize the lesions right in the region of the pons but then the question came up as to what kind of lesion did the patient have? Up until the time of the cisternal puncture she ran no fever and she did not have a leucocytosis. That in our mind seemed to rule out the possibility we were thinking of seriously of some sort of metastatic abscess but this affair appeared to be in relation to the pons but not intrapontine and more or less on the outside. But then it also had to be around the optic nerve. Of course, she was completely blind in her left eye. I don't know if she could even detect light with her left eye. So that placed it both down in the pons and if she had had optic atrophy and the complete blindness in the left eye that she apparently had that would have had to place it anterior to the chiasma because she seemed to be able to see fairly well with her right eye. Then, of course, we also know about her having this slight amount of pelvic inflammatory disease. But as I say, the tenable diagnosis seemed to be some sort of a purulent infection in the pelvis with metastasis to the brain in the region of the pons and up around the optic chiasma. Then the other possibilities would arise but what seemed more tenable than an abscess would be a malignancy because she was not having a leucocytosis or any febrile course. So that was where we were left and that's where I'll leave you. I believe it's either a pyogenic infection from the pelvis with metastases to the brain and spinal cord or a metastatic carcinoma from the pelvis to the spinal cord,

COLONEL BLUMBERG:

Is there anyone else who has any comments to make?

DOCTOR A. C. WARD:

Since this patient apparently only had a pelvic inflammatory disease when she was first seen, then after giving oil and wax, 600,000 units, you'll have to consider that this possibly could have gotten into the veins and started the whole workes with which we have. The patient had a pelvic inflammatory condition, I admit that, but she got worse after giving penicillin in oil. Lots of times it's very hard to determine with this wax as to whether you are in the vein or not and that may be where the whole trouble is.

COLONEL BLUMBERG:

Is there anyone else who has anything to say?

MAJOR BRONSTEIN:

I think when skilled people do spinal taps and only get blood that we have to think of the possibility of hemangioma either of the spinal cord or dura.

COLONEL BLUMBERG:

Anyone else?

COLONEL DOWNMAN:

Another thing that must be considered is an influenzal meningitis.

DOCTOR TWIGGER:

Most of the patient's neurological symptoms seemed to be peripheral and I think the whole package could probably and possibly be tied up in a Landay-Guillian-Barre Syndrom. It's hard to appreciate how she could have an intra-pontine lesion or a brain tumor with a functional lateral rectus and involvement of the VII nerve. As I say most of her neurological findings seemed to be peripheral and the Guillain-Barre disease supposed to be of virus origin.

COLONEL BLUMBERG:

Major Orbison is a senior resident on the Medical Service. We usually like to get one of the senior residents on record for all of our Clinico-Pathologic Conferences.

MAJOR ORBISON:

When the board is turned around you will see a wide variation of diagnoses. I won't attempt to try and run down a complete differential diagnosis for I'm sure many things must be considered. When studying the neurology books, every time I read a page or so, I came up against a blank wall. Finally I got out an anatomy book and tried to place where a lesion could be to explain things. We have to explain how we can get a complete optic nerve paralysis without involvement of the optic tract on the opposite side. That would seem to be a fairly well localized lesion between the bulb and

between the chiasma. That's a pretty short space. We have to explain how we get a complete peripheral VII nerve lesion without any apparant involvement of the VIII nerve. That means that where the VII and VIII nerves leave the brain stem they are in close association until they reach the internal auditory meatus. Therefore, there is where the seventh and eighth part company, and one goes over the wing of the sphenoid. In its most anterior portion it is closely associated to the optic nerve, a very short distance. Then it goes through the cavernous sinus where it is in close relationship to the III, the VI and the IV cranial nerves. That would explain all that. Then further back it becomes very close to the semilunar ganglion and if it were enlarged by tumor, hemangioma or arteriovenous aneurysm of the carotid artery, then that would explain all those nerves. Then it becomes very close to the facial nerves just before it dips into the hiatus of the facial canal. That's probably way out in left field but it would explain very nicely the findings without necessarily trying to explain it on an intramedullary type of tumor of the brain itself. Of course, as it enlarged it's right in the region of the brachium pontis and with the cerebellum connections could account for the Romberg. All this sounds very intriguing but that doesn't explain the spinal fluid very well. It might explain the lower extremity findings. If it doesn't explain the lower extremity findings very well it may be explained by a diffuse hemangioma such as a racemose angioma or as one doctor mentioned a hemangioma involving the lower cord and then maybe skipping up to the cervical cord. The one in the cervical cord might have been there sometime previously even two years ago and caused some atrophic changes in two arms and then skipped or being continuous up into the brain involving the vertebral vessels and carotid. We would like to try to explain something in the brain itself. You could also think of a syringomyelia. All of these are rare things and would not ordinarily be thought of. We are dealing with a very unusual case. We could postulate having a syringomyelia of the cervical cord two years previously which had progressed in that time just enough to cause some involvement of the nerves running into both upper extremities. We might also postulate some atrophic changes or something interfering with the blood supply of the muscles. I can't understand a 27 year old woman not being able to close her hands just on the basis of a little contracture around the elbow. A syringomyelia might involve the brain stem. We know of syringobulbia and it has been reported where it may dissect even up into the internal capsule. If you can dissect that far I see no reason why you can't dissect on up further. You can even get blood into it to form a hematomyelia. Some of the blood could escape down into the lower cord and people might have thought they were getting into the dura and they might have been getting into

the hematomyelia. I grant this would be rare. I think those that have already talked about the more likely possibilities are correct. but I thought I'd bring in some of the rare possibilities.

COLONEL BLUMBERG:

Thank you. We'll turn the board around and see what diagnoses were turned in; in all there are 27 opinions as follows:

Brain tumor	Mycotic meningitis
Tumor of the mid-brain	Tuberculous meningitis
Tumor of the pons	Unclassified "
Cord tumor	Neisseria meningitis
Brain abscess	Lymphocytic choriomeningitis
Abscess of pons	Multiple sclerosis
Tuberculoma of spinal cord	Mumps encephalitis
Pelvic abscess	
Pelvic abscess, tuberculous	Rheumatic endocarditis
Pelvic carcinoma with metastasis	Paresis
Ovarian tumor	Disseminated lupus erythematosus
Tuberculosis military	Angioma of cord
Acute bacterial endocarditis	Bronchopneumonia

Dr Sydenstricker will comment on some of these diagnoses.

DOCTOR SYDENSTRICKER:

This is a formidable array of diagnoses and I think we might summarize the situation in that here is a young woman who died after an illness of a month which was characterized by, first, intermittent pain and marked weakness of her legs eventuating in a flaccid paraplegia with pelvic symptoms which was suspected of being pelvic inflammatory disease which did not respond to penicillin therapy. She later developed evidences of disseminated lesions of the spinal cord and brain. A fulminating multiple sclerosis has been mentioned and from strictly neurological findings might be tenable. Spinal fluid is not compatible with that nor is the prominence of her abdominal symptoms. It is indeed unfortunate that no gynecological opinion was obtainable on this woman. Of the diagnoses on the board, military tuberculosis leads the list and perhaps has many things in its favor. One person hypothesized scattered tuberculomas of the brain and cord with a possibility of a large lesion in the lumbosacral region of which there was no anatomical evidence other than repeated bloody taps. Cord tumor would explain the paraplegia perhaps but not the cranial nerve findings. No one has mentioned mumps to any extent but I think everyone felt that that was one of the well-known red herrings, yet mumps meningeal myeloid encephalitis

can cause symptoms very much like acute multiple sclerosis. The spinal fluid findings are not consistent with mumps, however, because the cells are practically 100% lymphocytes and the number is apt to be greater than we find here. I'm inclined to lay more stress on the pelvic and abdominal findings than has been done. This woman apparently had some lesion of the pelvis which resulted in the development of an ascites prior to death. We have no knowledge whatever of what might have been felt in the pelvis. She had a purulent vaginal discharge which might have been due to necrosis of a rapidly growing tumor. I think that the idea of the fulminating pelvic malignancy with extension to the lumbosacral region of the cord, multiple metastases in the brain stem is perhaps the most likely answer to this very obscure case. I'm not enough of a gynecologist or pathologist to have any ideas about the nature of the tumor. There are not many which could be so fulminating. An arrhenoblastoma would probably have been of longer duration to have produced masculinizing effect in the patient. A cystadenocarcinoma of ovary conceivably might have done it. One of the rarer things such as a seminoma which had broken out of the capsule and metastasized in a fulminating manner would have to be considered. I can't add any more.

COLONEL BLUMBERG:

Thank you, Dr Sydenstricker. The autopsy findings will be presented by the resident in pathology.

CAPTAIN HARTNEY:

Autopsy was performed approximately one hour after death. There was no rigidity and body heat was still present. The body was that of a well developed and well nourished white female appearing approximately the stated age, presenting mild abdominal distensions, the only finding externally. The cecum was dilated, the peritoneal surfaces both in the general abdominal cavity and in the pelvis were smooth, moist and glistening. A single exception to this was the presence of an adhesion between the omentum and the fundus of the uterus. The remainder of the abdominal viscera showed no significant abnormality on examination in situ. Within the thorax there was approximately 20 cc of serous fluid in the pericardial sac, the pleural cavities were free, the lungs were increased in weight, somewhat bulky and subcrepitant. The first organ in which significant findings was noted was the heart. There was some degree of epicardial thickening over the posterior wall of that ventricle. The heart was of normal size; the contour and consistency were approximately normal with a single exception. That was a nodule thickening occurring in the inner apical septum. This measured approximately 1.5x 2 x 1 cm. Plate 1 is a view taken from inside the right side of the heart. We see the tricuspid valve ring, the



Plate 1.

Right Side of Heart.

right atrial endocardium is mottled with purple-red and you see the projecting nodule which bulges to a slight extent into the atrial cavity. It shows a section through this area laying back a flap of the atrium which shows this large nodule of greyish-white tissue mottled with purple-grey which occupies the inner atrial septum. The only additional findings in the heart were the presence of a bicuspid aortic valve and slight thickening of the closure margins of the mitral valve. Within the abdominal viscera the liver, spleen, kidneys and gastrointestinal tract showed no abnormalities. The right adrenal showed multiple small yellowish to grey-white nodules at the cortico-medullary junction. The medulla of the left adrenal was increased in bulk and presented a grey-white appearance. The left ovary presented a single poorly defined $1\frac{1}{2}$ cm. nodule of grey-white tissue which replaced a portion of the ovarian stroma. (Plate 2) The serosa of the ovary was smooth and was not ruptured at any place. The relation of the ovary to the surrounding organs was normal. Within the central nervous system, the first finding of interest was the presence of thrombosis of the superior sagittal sinus, of the lateral sinuses and the straight sinus. The thrombosis within the lateral sinus on the right appeared older and is beginning to organize while that on the left was softer and appeared more recent. Gross examination of the brain at the autopsy table and following ten days fixation in formalin showed no distortion of brain architecture. Plate 3, a photograph of the lower 17 cms. of spinal cord revealed that there is marked thickening of the cauda equina and the lumbar portion of the cord is extensively mottled with grey to purple-red and multiple transverse sections in this area especially in the cauda, but the nerve roots were glued together by masses of purple-brown raw material which grossly resembled blood clots. At higher levels in the cord beneath the pia arachnoid was seen a fairly well defined layer of grey-white tissue approximately 1 mm. in thickness which surrounded the cord underneath the meningeal investment. In the thoracic level of the cord sections revealed what appeared to be gross softening of the central grey matter and at a high thoracic level there was a bulging appearance which suggested eruption of material of some sort from the inside of the cord to the subarachnoid space.

COLONEL BLUMBERG:

Sections taken from these various areas showed a tumor in both ovaries. We were at first at a loss in looking at this lesion in the heart. Two things came to our mind. One, and this was in the autopsy room, did we have a lesion that was primary in the heart or did we have one which was metastatic? The character of the tumor was a sort of grey appearance with areas of redness due to hemorrhage and some slight degeneration of the tumor mass and one of the first things that came to our minds was a neuroblastoma. We've had several of those cases here and it had a similar appearance in the



Plate 2.

Left Ovary.



Plate 3.

Lower 17 cms. of Spinal Cord.

lesions that we first saw. When we got to the adrenals we failed to find tumor. There was a little divergence of opinion among our own staff at that moment as to whether the thick medullary portion could possibly be tumor and some of those nodules might be tumor arising in the medullary portion with these numerous metastases. Further study showed the primary tumor was in the ovaries bilateral. There had been a hematogenous spread and the spread from metastatic nodules over in the lower portion of the spinal cord, which then went up the pia arachnoid, involving practically all nerve roots and cranial roots to some degree more or less (Plate 4). Some areas were well marked and others to a very minimum degree. This went clear up and around all coverings of the brain and accessory nerves, the cranial nerves and involved the area very much around the optic nerves and also the pituitary (Plates 5, 6, 7). I think we can demonstrate some of these things histologically. Tumor was not one in which you could put your finger on it immediately. This is a high power view taken from the ovary (Plate 8) in which we see at this point what appears to be normal ovarian stroma. Here we see the margin of that ovarian stroma where we have the borderline of the invading tumor. The next section (Plate 9) shows a little higher view from the primary site in which we see that you have what appears to be a fairly uniform type of a round cell moderately large and in the fixed state does not show too much of a cytoplasm but has a rather dense nucleus which is undergoing numerous mitoses. I think the next one will show that very clearly and where we do have a rather marked basophilism of the nucleus with rather shallow rims of cytoplasm (Plate 10). In some of the sections we can see the faint outlines of a few so-called remaining types of lymphocytic cells. Next we'll look at sections from the heart lesion in which we see that it is the same type of tumor that is infiltrating throughout (Plate 11). The next one taken from the heart in the region of the ganglion (Plate 12). The next section (Plate 13) shows one of the scarred areas that was apparently in the adrenal either from old hemorrhage that is now healed in which we have fibrosis and some calcific deposition. The next slide (Plate 14) shows the little white areas that we thought might be tumor initially which bear out to be thromboses of the larger vessels of the medulla; the medulla and cortex are uninvolved in the process. Plate 15 is another section taken from the adrenal in which we can see the areas of hemorrhage which were noted grossly. The next section (Plate 16) is typical of one of the nerves of the cauda equina. This particular one was taken to show why bloody taps were obtained. You can see the selection of this tumor for nerves. How it seems to want to go around all of them and follow up the perineural sheath. It has been shown in previous plates how the tumor gets itself about vessels, involves the entire wall of the vessel and travels along their course

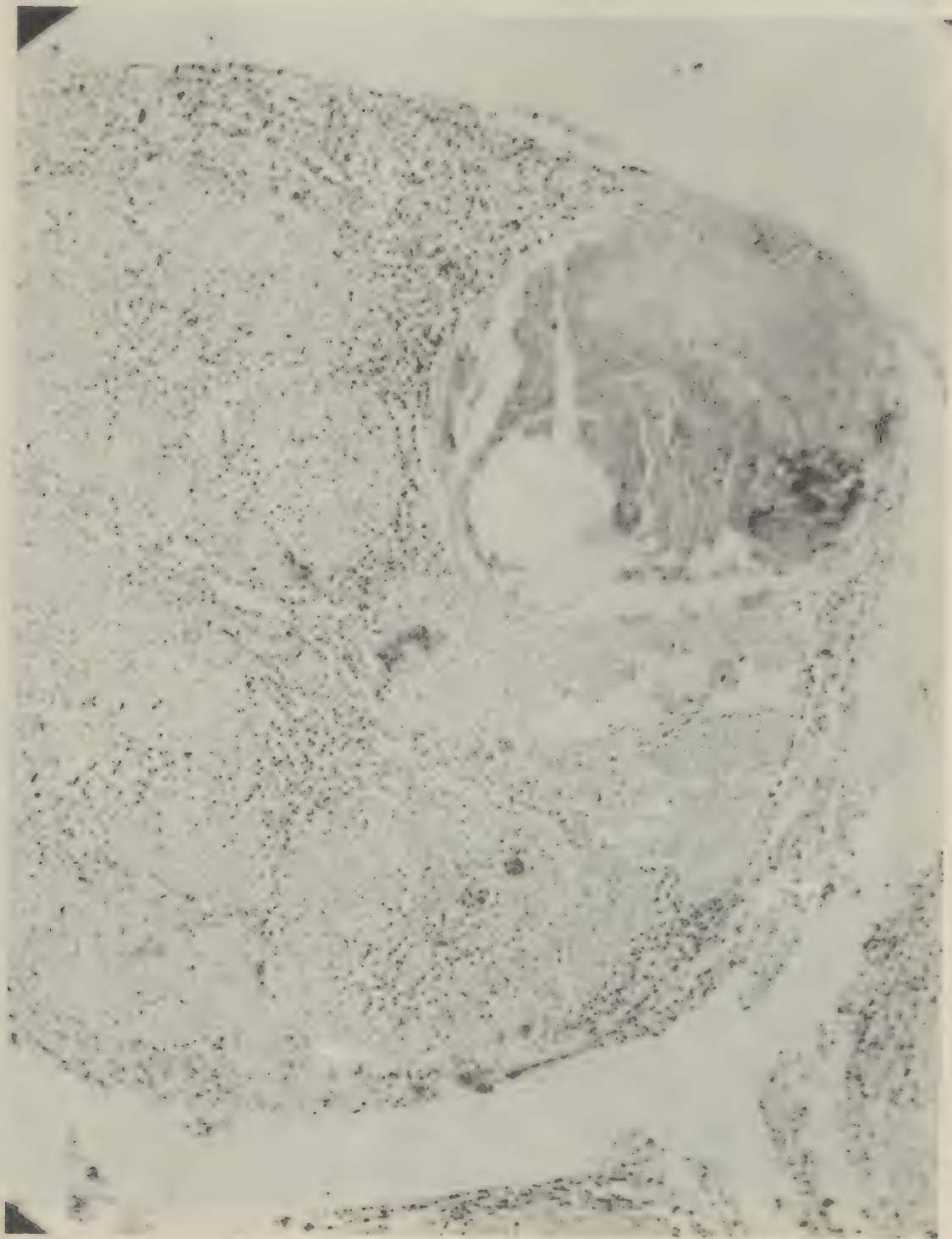


Plate 4. Hematogenous Spread from Metastatic Nodules
in Lower Portion of Spinal Cord.

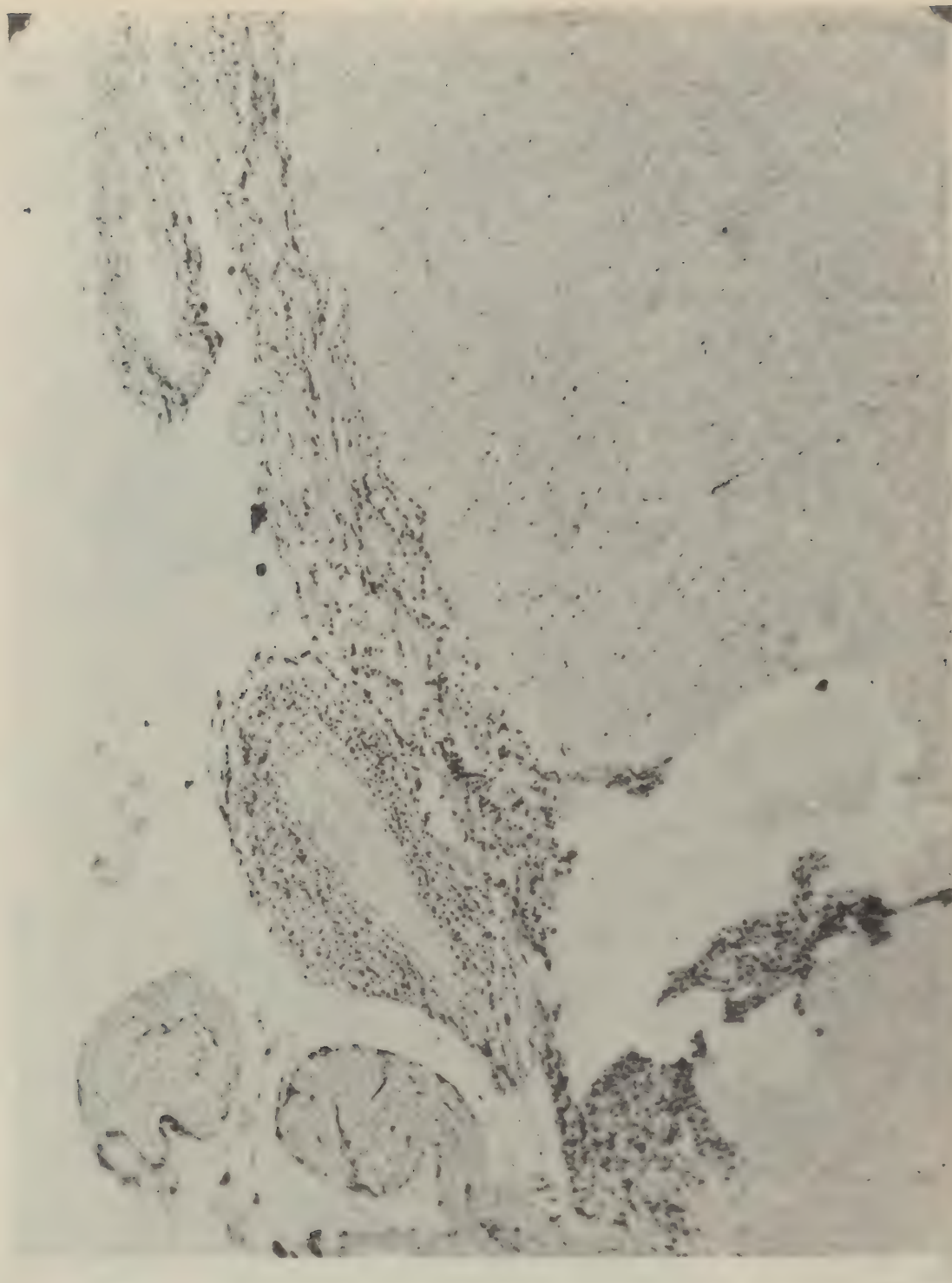


Plate 5. Brain with Tumor in Subarachnoid Areas.

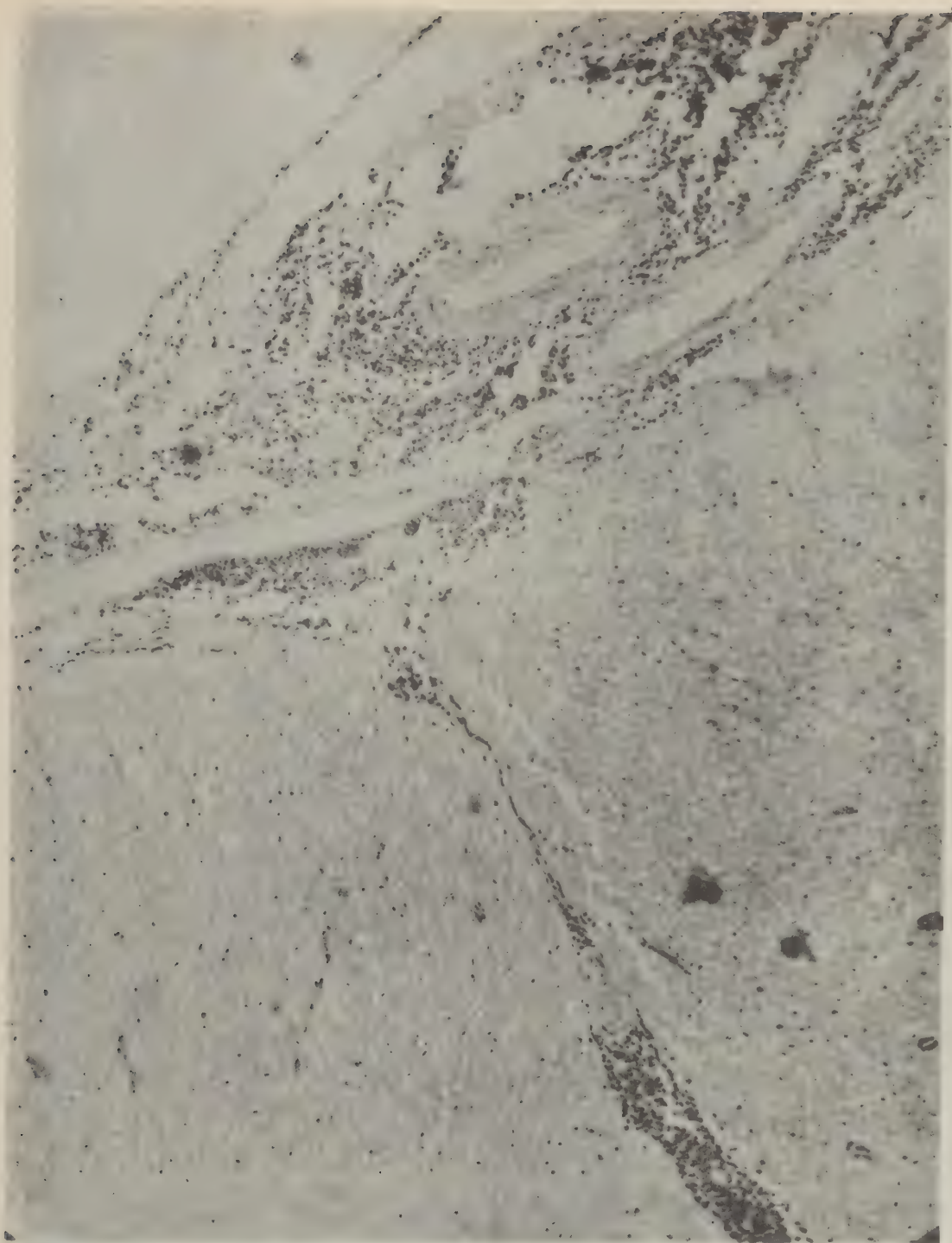


Plate 6.

Tumor Cells, Meninges.

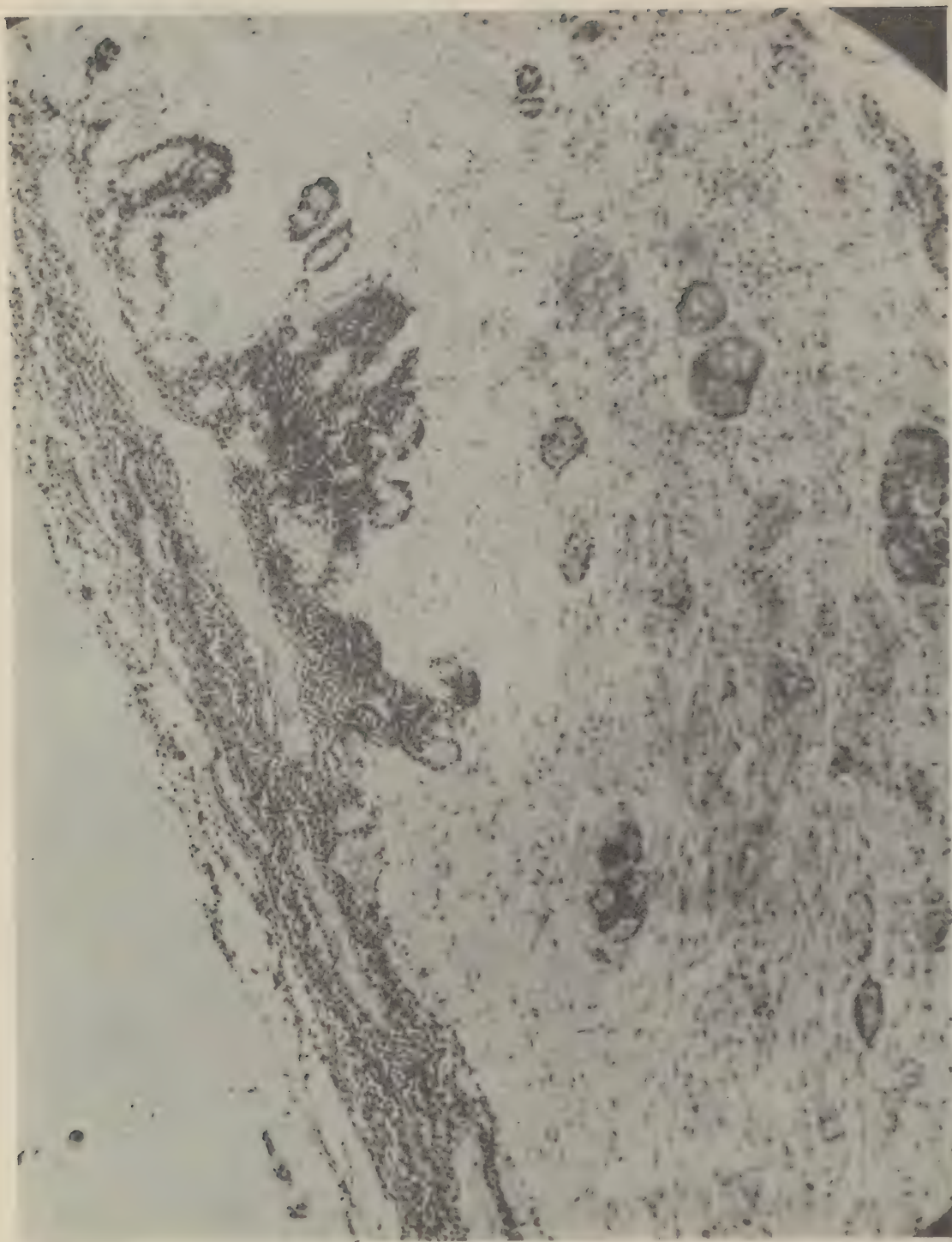


Plate 7. Tumor About Pituitary. (Pons Negrosa)

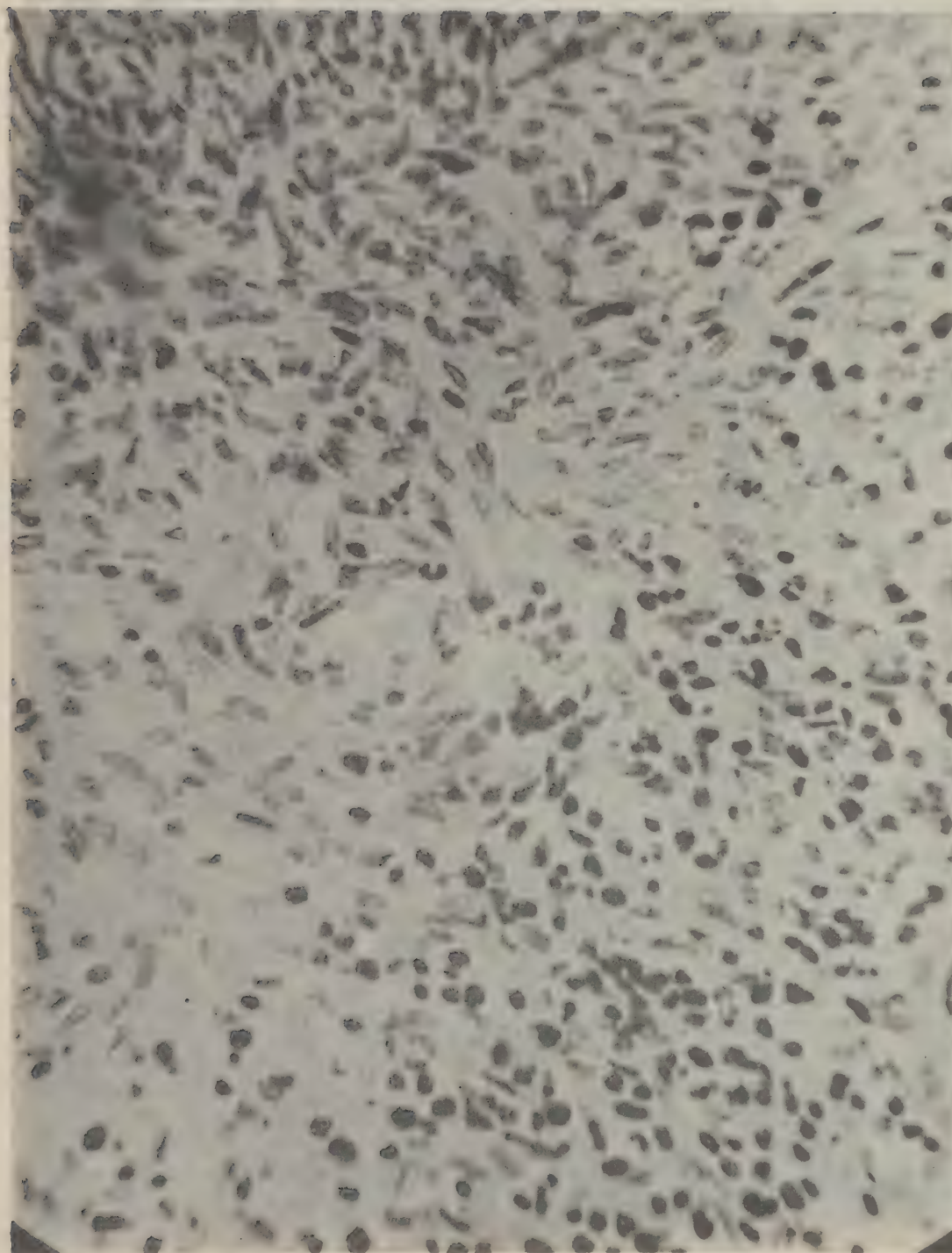


Plate 8.

H. P. of Ovary With Tumor.

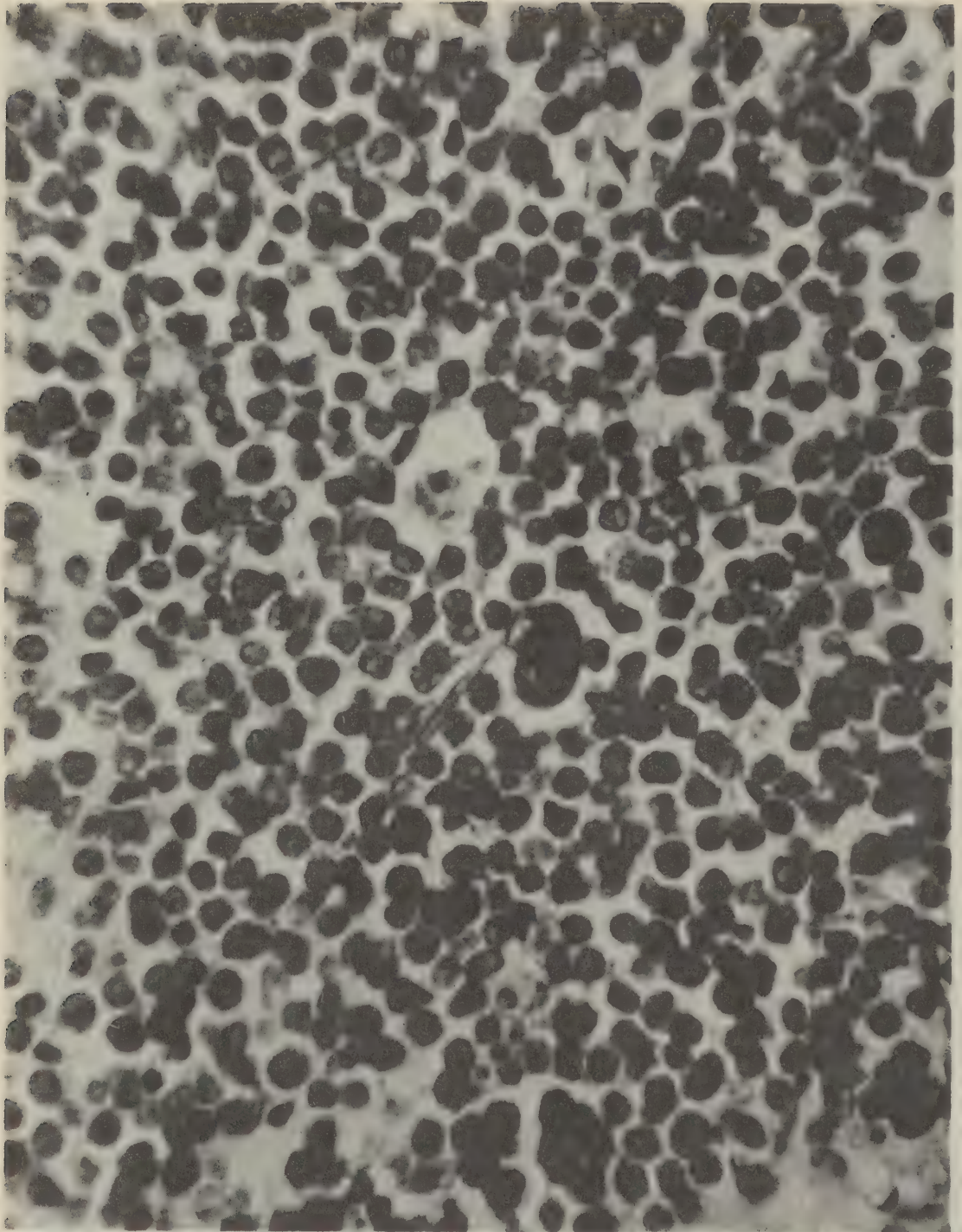


Plate 9.

H. P. of Ovary Showing Tumor Cells.

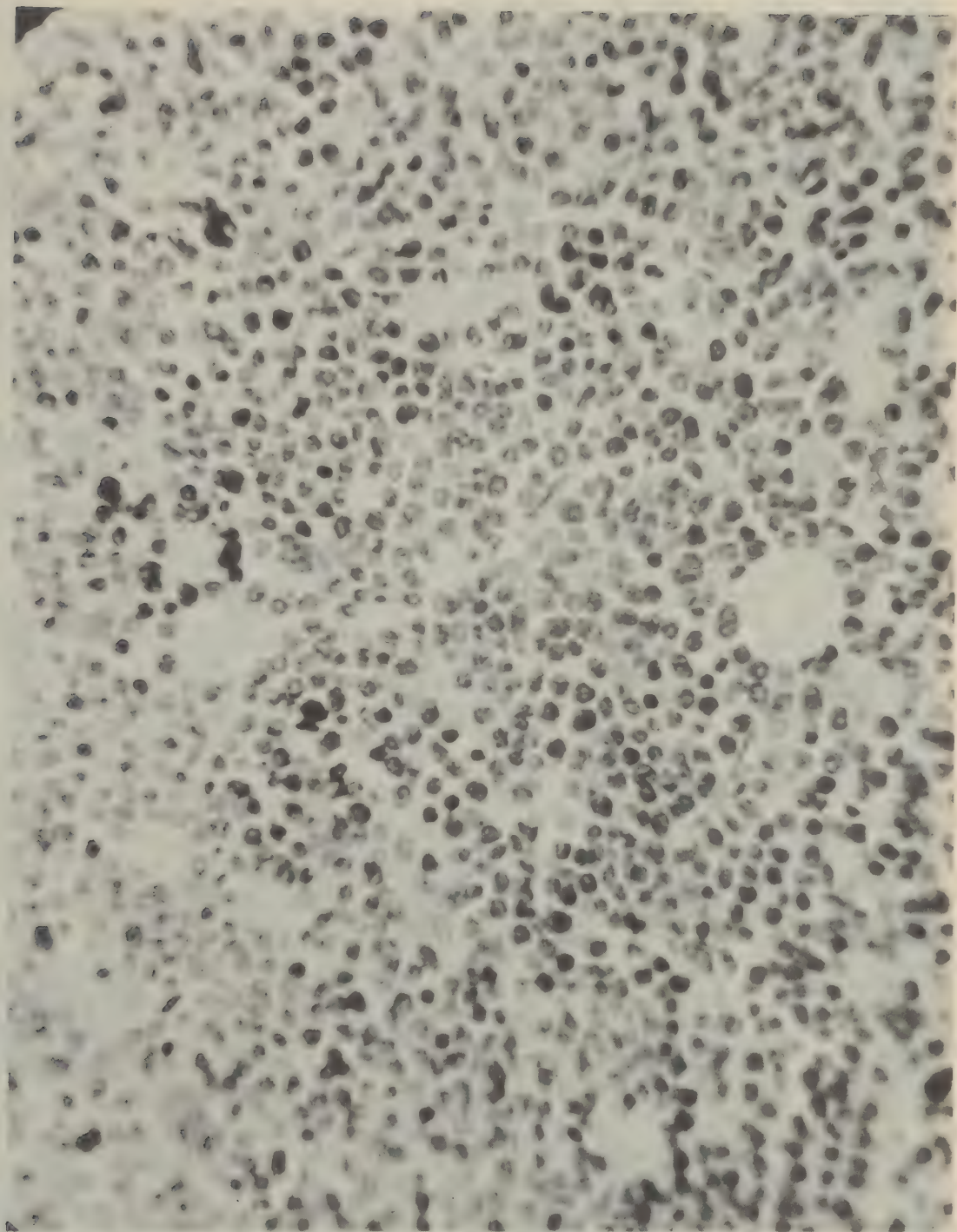


Plate 10.

Ovary Tumor. H. P.

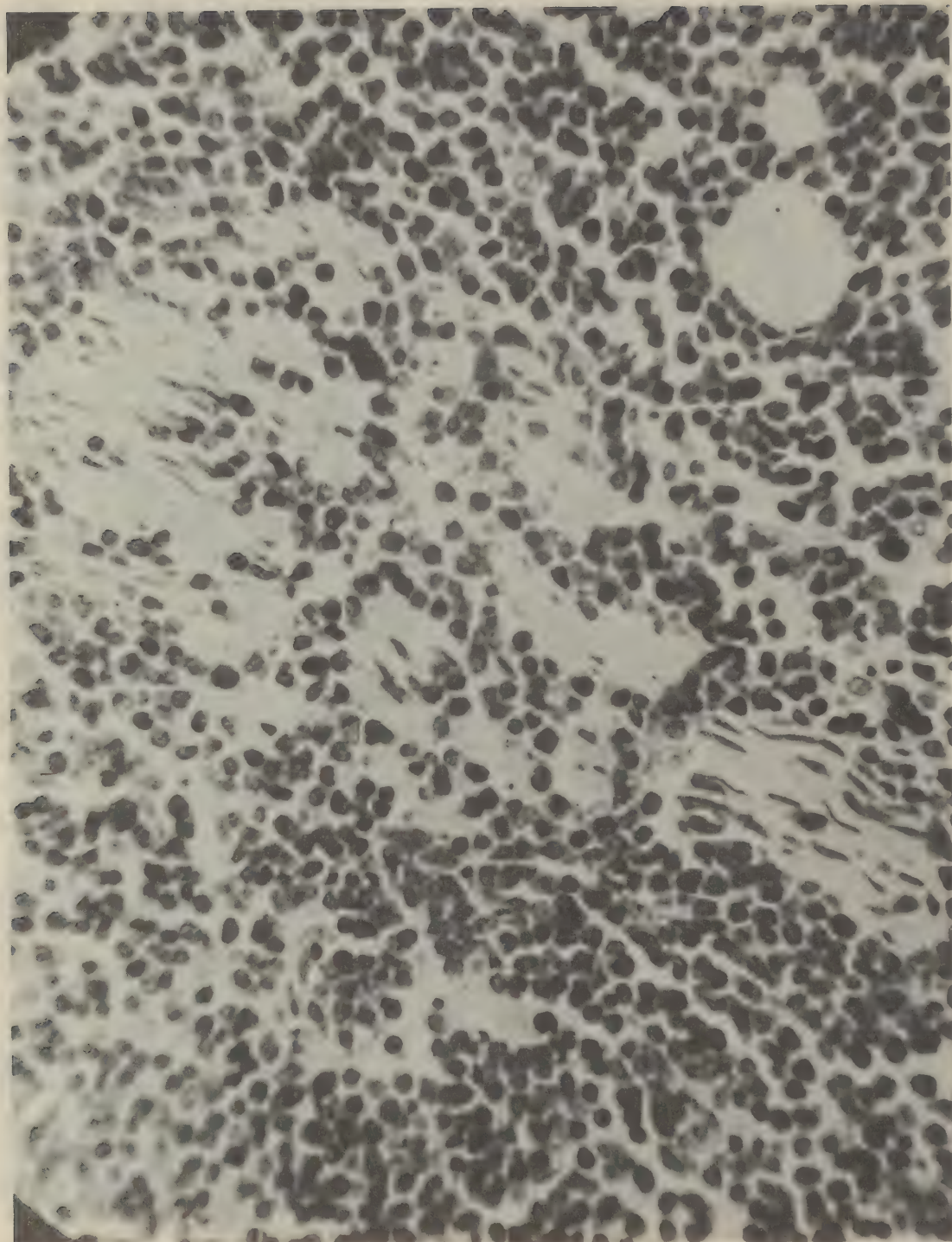


Plate 11.

Heart With Tumor Infiltrating.

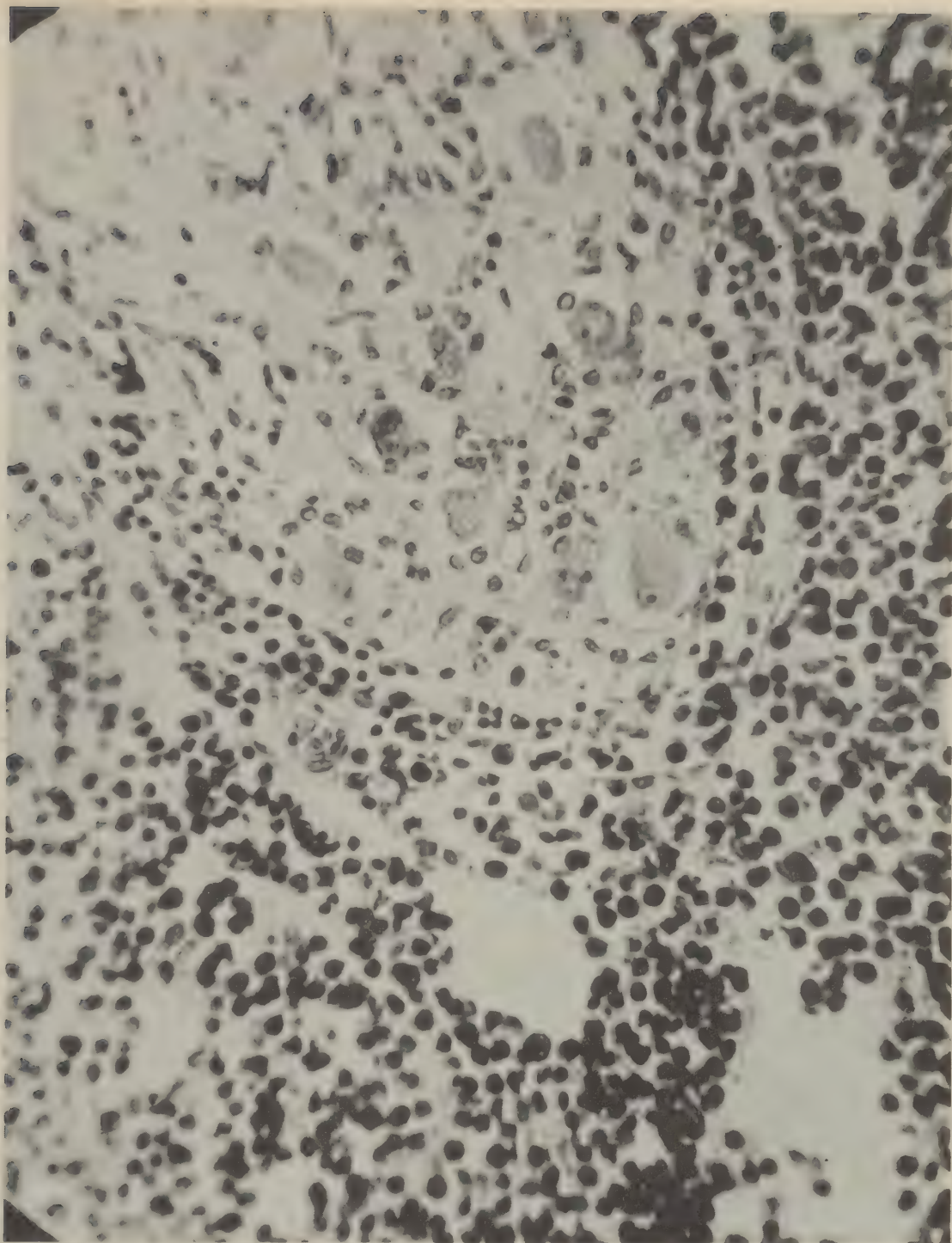


Plate 12. Heart With Tumor in the Region of the Ganglion.



Plate 13. Adrenal with Scar from Old Hemorrhage.



Plate 14.

Thromboses in Adrenal.

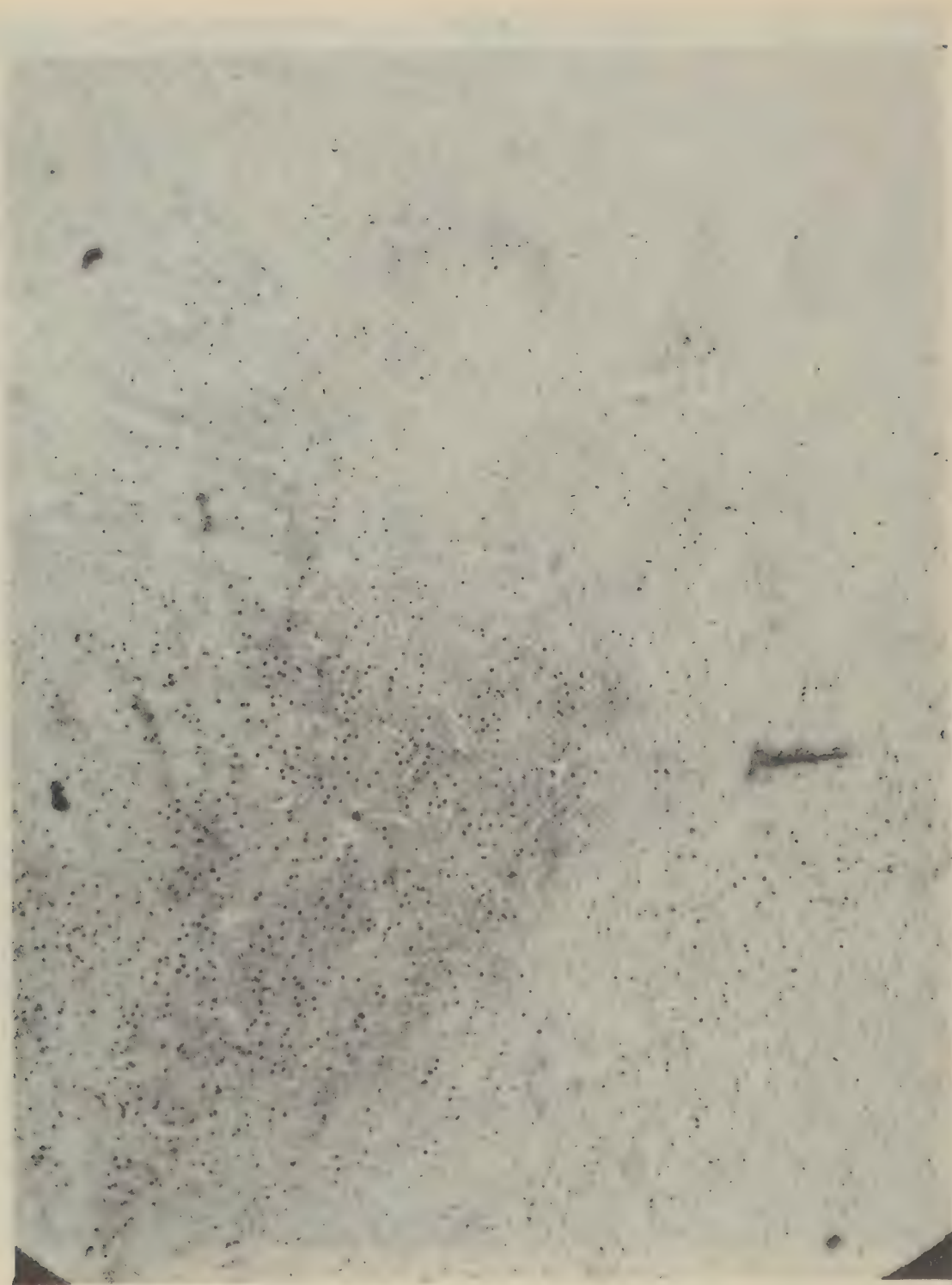


Plate 15.

Adrenal with Hemorrhage.



Plate 16.

Nerves of the Cauda Equina.

as well as the nerves. Plate 7 is from the region of the pituitary in which we see a section of this gland which is involved by the tumor. In summary then, we have a case in which the primary disease process in a bilateral dysgerminoma of the ovary in which there were metastases to the heart and spinal cord and brain, the leptomeninges being largely involved. In the region of the cauda equina were markedly dilated which accounts for the numerous bloody spinal taps that were obtained. Other significant findings include the thrombosis of the adrenal vessels and the sagittal sinus of the dura (Plate 17).

As most of you know the name dysgerminoma was proposed by Meyer in 1931 in which it was stated that it represents germinal tissue tumor indistinguishable from sexually undifferentiated cells. There are many synonyms for this process, some of which are embryonal carcinoma, sarcoma, round cell sarcoma, seminoma, sexual cell sarcoma and large round cell sarcoma. Three-fourth's of the women that have this tumor are under 30 years of age, one-half are under 20 and only rarely is a case seen under 10. The right ovary is involved in about 48% of cases, the left ovary in 26% and it may be bilateral in 26%. There has been no hormonal evidence in any of the tumor. Ovarian tumors are interesting due to the uncertainty of histogenetic relationships. It is felt by some that a particular tumor may be derived from a particular type of ovarian tissue. Waldeyer states that the follicular epithelium comes from downgrowths of the germinal epithelium and that the stroma of the cortex is an undifferentiated blastema which gives rise to the epithelium of follicles and non-epithelial thecal tissues. Thus, it can be seen that the stroma of the ovary is not mere connective tissue. It is felt that some pathologists may desire to classify this tumor as a granulosa cell one due to the fact that in certain parts of the ovary there can be seen an occasional clear type cell that appears to be granulosa in type. By us, it is felt that due to the origin of ovarian tumors of this type that there is no reason that this type of cell could not be present. However, the prominent cell of the tumor is as I have shown you with occasional areas of lymphocytic foci. For that reason we are coding this as a dysgerminoma.



Plate 17.

Thrombosis of Sagittal Sinus.

ORGANIZATION OF THE MEDICAL DEPARTMENT
AND OLIVER GENERAL HOSPITAL

CAPTAIN ANTHONY DE MATTIA, MSC

Adjutant, Oliver General Hospital, Augusta, Ga.

We have all witnessed the successful conclusion of the most destructive and costly war in the history of mankind. The members of the profession of hospital administration answered the call to arms and in no small measure aided in the final victory.

Administrators served in all branches of the Army during the late war. We are especially proud of those who served in the Medical Department as enlisted men, as well as those who served as officers upon completion of our Medical Administrative Corps Officer Candidate School. One cannot presume that future wars can be fought with the weapons of the past war, nor is it feasible to consider the pattern of operations that previously proved successful as the mold for any future emergency. The same holds true for utilization of personnel of the Medical Department.

It was our experience in the late war that the Medical Department could well utilize the skills of many personnel other than doctors of medicine and dentistry. Some of these skills are in Chemistry, Serology, Parasitology, Psychology, Entomology, Sanitary Engineering, Optometry, Business Management and Law, and Pharmacy as well as Hospital Administration. The necessity for a team and for team play was evident. The lessons learned during the war demonstrated a need for a Corps within the Medical Department of the Regular Army, as well as the Organized Reserve, that would embrace the entire range of those skills. You are all familiar with the formation of the Medical Service Corps created under Public Law 337.

I should like to take this opportunity to give you a brief report of the status of the Corps.

The Chief of the Medical Service Corps is Colonel Othmar F. Goriup; The Corps is sub-divided into four sections each with a section chief, as follows:

Pharmacy, Administration, and Supply Section - Chief, Major John V. Painter

Optometry Section - Chief has not been announced

Sanitary Engineering Section - Chief, Major Raymond J. Karpen

Medical Allied Sciences Section - Chief, Lieutenant Colonel
Charles S. Gersoni

The Regular Army Component is authorized a strength of 1022 officers. Sixty per cent is allocated to the Pharmacy, Administrative and Supply Section. During the integration program it was necessary to transfer a considerable number of officers who were previously commissioned in the Medical Administrative Corps, The Sanitary Corps, and The Pharmacy Corps to the newly created Medical Service Corps. Literally, thousands of applications from war time officers for integration into the Regular Army Medical Service Corps were reviewed. The bulk of these applications were from officers who were qualified in one way or another for duty with the Pharmacy, Administrative and Supply Section, with the consequence that we are currently slightly over strength in that section.

This overage has made it necessary to temporarily suspend the acceptance of applications for commissions in the Regular Army Medical Service Corps for subsequent assignment to the Pharmacy, Administration, and Supply Section. The net result of transfers to, and new commissions in, the Regular Army Component has yielded 75 graduate pharmacists. These officers are currently rendering commendable service. They are serving as officers in charge of pharmacies in our general hospitals, in the field of Medical Supply including procurement, storage and distribution of drugs, and in the many phases of Medical Administration such as Hospital Adjutants, Registrars, Mess Officers and Hospital Commanders.

They are serving also as Administrative Assistants to Staff Surgeons in staff duties in the various divisions of The Surgeon General's Office as well as in The Office of The Air Surgeon and as instructors at the Medical Field Service School. Some of them are detailed to the General Staff Corps, one is currently attending the Industrial College, another is completing graduate training at N.Y.U. in Business Administration, while yet another is located in Helsinki, Finland, as an Assistant Military Attache. Several have earned their masters degree at Northwestern University in Hospital Administration and all of them have attended one or more service schools.

In speaking of Medical Department personnel, one cannot refrain from noting the existing shortage of physicians in the service and the apparent excess of demand over supply in civilian life. You, no doubt, are thoroughly acquainted with the civilian situation through your daily contacts with the medical profession. It is The Surgeon General's earnest desire that the Medical Service of the Army lead in maintaining the highest standards of contemporary medicine.

In order to achieve that end, it is necessary to insure that the Medical Officers receive as much professional training as is necessary to qualify them for all the specialized fields in the practice of total medicine. This will insure the highest level of Medical Service, provided that it is made possible for them to confine their work to the varied preventive, research, clinical and management duties in which they are especially qualified.

In order to relieve the Medical officer of as many non-professional duties as is feasible, The Surgeon General has directed that a survey be made of all duties being performed by Medical Officers. This survey is a continuous responsibility of The Surgeon General's Office to determine which administrative duties must be performed by a medical officer, which are desirable that he perform, and which it is wasteful for him to perform. The Surgeon General is confident that many things now being done by medical officers will become the responsibility of Medical Service Corps officers.

Personnel requirements are directly proportional to the missions prescribed for the Army. No one can predict the quantitative nor the qualitative factors involved in the event of any expansion of the Army with attendant expansion of the Medical Department. One thing is certain, that in future emergencies, as in the past, the Regular Army Medical Department will furnish the administrative framework which must be augmented by talent drawn from civilian life. It is not within the sole province of the Medical Department to determine the best method for allocation of this talent in a future emergency.

Wars are wasteful. We cannot, in this age of technological warfare, determine the numbers that can safely be earmarked for the Army and the numbers that will be required to safeguard the health of the civilian community. The corner drugstore is a National Institution and an important link in the chain of public health and even more so in the event of total war. It still remains incumbent upon you and me to make every effort to insure that we have too many, rather than too few. By that I mean we must have an adequate, well trained, well informed reserve in being, ever ready to augment the Regular Army on short notice.

Earlier in my talk I explained that we were currently over-strength in the Pharmacy, Administration, and Supply Section of the Regular Army Medical Service Corps. The same is not true of the Reserves. No ceiling limitations are imposed upon the Civilian Component of the Army by budgeting considerations as in the case of the Regular Army.

Obviously, the Medical Department of the Army must be ready to function at all times, and if a sufficient number of officers who are otherwise qualified do not avail themselves of the opportunity of a Reserve Commission, it will, of course, be necessary for us to develop our own personnel. It is in this phase of the development of the Medical Service Corps that we particularly require the cooperation of Pharmaceutical Organizations and Educational Institutions. Authority presently exists for a Medical Service Corps Reserve. All former officers holding a Reserve commission in the MAC, Sanitary Corps and Pharmacy Corps were transferred to the MSC-Res, by Department of the Army Circular 35, dated 5 November 1947. All commissions granted subsequent to that date have and will be made in the MSC-Res.

The implementation of existing Legislation, insofar as Reserve matters are concerned, is largely a matter of administrative procedures taken by the Department of the Army.

A directive is currently being developed by the Department of the Army which will enable those graduate pharmacists, who are qualified, but were otherwise denied the opportunity of participating in the Pharmacy ROTC Unit, to receive a direct appointment in the Medical Service Corps Reserve with or without prior military service. In those cases, it will be necessary for the applicant to meet a Board of Officers and undergo certain screening procedures to qualify for their Reserve commission.

Upon all who apply for and receive appointments in the Officers Reserve Corps, there devolves, to my mind, certain responsibilities of considerable importance.

The acceptance of a commission should be only the first step along a road that is admittedly difficult. The officer owes to the nation and to himself the duty of constantly seeking in every way the knowledge and attributes of leadership required of an officer in time of peace and war.

If it could be said with assurance that an officer, when called to Active duty, would be utilized in a sole capacity, the problems would be relatively simple, but such is not always the case.

The Medical Service Corps officer, by virtue of his commissioned status, is first and foremost an officer. By that I mean that he must be qualified to take his place among those whose first concern must be the training and welfare of the enlisted man and even of his junior officers who will look to him for supervision and assistance.

A knowledge then, however, extensive and keen of one phase of Hospital Administration alone is not enough. With that in mind, permit me to mention briefly some of the problems peculiar to the military service with which every officer to some extent, depending on the nature of his training and utilization, should be familiar - a knowledge of military organization and tactics, logistics, training methods and techniques, military law, sanitation, and military records.

It is obvious from the mention of even these few items that some officers with little or no prior military training, must seek to acquire the additional training that can and will make him a valuable officer. Much of this training admittedly will require the Reserve officer to donate a portion of his already too few leisure hours.

Through the medium of Medical Department Extension Courses he can acquire some of the knowledge required and through the medium of seeking, whenever possible, short tours of Active duty, he can acquire additional knowledge and experience. An active, not passive, interest in Reserve affairs will keep him abreast of new trends and techniques of the Army Medical Department. The man who stands ready to help in these ways and more, we need and desire. This type of Reserve officer is the backbone of our Civilian Components of Defense.

There were some 22,000 officers of the combined Medical Administrative, Sanitary and Pharmacy Corps on Active duty during World War II. Not all officers who served in the recent war accepted a Reserve commission upon separation from the service. It is important that we constantly replace recurring losses.

It is always a possibility that the numbers of physicians available to the Medical Department in the event of an emergency will approach an absolute minimum. In that case we would, of necessity, lean even more heavily upon our Medical Service Corps Reserve officers. And too, after receiving his Reserve commission, it is incumbent upon him as well as all other Medical Department Reserve Officers to maintain an active interest in Army affairs.

We are by nature and concept of Government not militaristically inclined. Our strength has always rested in our citizen soldiers. A well-informed citizenry, alert to the needs of the nation, has always been and is now the keystone to our freedom.

MUTUAL COOPERATION BETWEEN MEDICAL SCHOOLS AND ARMY HOSPITALS
IN UNDERGRADUATE AND POSTGRADUATE MEDICAL
EDUCATION

G. LOMBARD KELLY, MD

Dean, School of Medicine, University of Georgia
Augusta, Georgia

I appreciate the privilege of speaking on the relationship between the University of Georgia School of Medicine and the Oliver General Hospital and the opportunity to discuss this relationship in some four or five locations throughout the country.

In the Fall of 1947, while attending the annual convention of the Association of American Medical Colleges, I had the pleasure of meeting General George Armstrong, just after he had made an address in the auditorium at Sun Valley, Idaho. During his talk, General Armstrong referred to the close relationship between four medical schools and four Army hospitals, and one of the medical schools which he listed was ours. At that time the program was not so well organized as it is at present. During my chat with General Armstrong in the lobby of the Challenger Inn at Sun Valley, after his address, I was dumbfounded and delighted when he asked me why we did not send our senior students to the Oliver General Hospital as ward clerks. As badly as we needed additional clinical material for teaching purposes, this suggestion to me was in a way equivalent to having someone say, "Here is a million dollars. Take it and have yourself a good time."

Seriously, we did not hesitate in acting upon General Armstrong's suggestion; and about two months later, during the first week of January, 1948, we began assigning senior students to serve as ward clerks in medicine and surgery under the capable supervision of Colonel Charles Leedham and Colonel Earl Lewry. I took occasion to investigate the nature of the training the students were getting and I found out their supervision was not only all that was to be desired, but also that the hospital staff was well pleased with the work that the students were doing.

The students continued to serve as ward clerks during the second and third quarters of the 1947-1948 school year and have been carrying on the same type of service here during the three quarters of the current school year.

In addition to the clinical clerkships of our students in the wards at Oliver General, many of our faculty members have been serving as consultants in various specialties. This relationship has proved mutually agreeable and beneficial.

I have been informed by General Armstrong that Georgetown University Medical School and George Washington University Medical School are carrying on a similar program in the Walter Reed Hospital in Washington; that the University of Colorado Medical School is carrying on a similar program at Fitzsimmons General Hospital in Denver and that the Medical Schools of Stanford University and of the University of California have a similar program in cooperation with the Lettermann General Hospital in San Francisco. The new medical school of the University of Washington at Seattle is cooperating in a program at Tacoma, which is about thirty miles distant.

In summary, there are some six medical schools participating in a teaching relationship with four or five Army hospitals. The advantages of this relationship are obvious, since the specialists in the medical schools serve as consultants in the hospital and cooperate with the hospital staffs in the treatment of patients. In addition they assist in the training of the internes and residents in these Army hospitals, and finally, the senior students in the medical schools have the advantage of serving as ward clerks in the Army hospitals and observing a wider variety of disease conditions than would otherwise be possible.

I am not in a position to speak for the other medical schools in which this relationship exists, but I wish to say that it is an extremely happy one for the University of Georgia School of Medicine. We deeply appreciate the fine cooperation of the administrative officers and the staff members of the Oliver General Hospital and we sincerely trust that this intimate teaching relationship can continue indefinitely as it is at present. Our faculty and students appreciate the value of the relationship and wish to do everything possible to make it mutually beneficial.

Needless to say, we feel very grateful to General Armstrong for his suggestion which led to the consummation of the arrangement.

INDIVIDUAL MEDICAL RECORDS AND CLINICAL RECORDS

MAJOR FERNANDO S. ROJO, MSC

Registrar, Oliver General Hospital, Augusta, Georgia

NEED FOR RECORDS. - "Every action that hath gone before, whereof we have record" is a record, according to William Shakespeare in his writing of "Troilus and Cressida." We all know that to commit ourselves to writing in order to have a record is sometimes a tiresome procedure. However, to have an accurate account in writing of facts and events is indeed a most valuable document to refer to at the proper time. We do have a reason for having a written record or report of all data that is considered important to us. Courts formally enroll Proceedings because when such Proceedings are made a matter of record, they are valid as evidence. In order to determine whether the past reflects a good or bad degree of achievement, records are kept on individuals, organizations, ships and even horses. Industries keep records of production to know if their output is increasing or decreasing; stores keep records on sales to know if they can expand their business or if they are going bankrupt. The Army keeps records for many reasons. Personnel Records, for instance, reflect our efficiency, schooling, assignments, achievements, pay status, duty status, flying status, awards and decorations. BUT, Army records that indicate treatment, examinations, operations, therapeutic procedures, diagnostic procedures, complications and diagnosis are probably the most important records to the Army, and to every person who is or has been in the military service of our country. Accordingly, MEDICAL RECORDS is my topic for today.

IMPORTANCES OF MEDICAL RECORDS. - There are several kinds of medical records; however, I shall cover only the Individual Medical Records and the Clinical Records. I consider these two types of records the most important of all the Medical Department records prepared and maintained, and here is why:

(1) These records furnish complete and diagnostic information on each individual patient, including personnel killed in action, to the Surgeon General, Department of the Army, in order that:

(a) Data may be available for the conduct of the business of the Department of the Army and other governmental agencies, with particular reference to the retention of the physically fit in the Service, assignments to duty, adjustments of pay accounts, and the adjudication of claims for compensation or pensions.

(b) Detailed scientific studies may be made on the incidence, nature and effects of disease, injuries and wounds.

(c) The adequacy and effectiveness of the diagnostic and therapeutic measures of the Army may be properly evaluated.

(d) Data may be obtained upon which to base plans for medical service for the personnel in the Army, as well as for the care of those separated from the service because of medical reasons.

You may wonder: What about Disposition Boards, CDD Boards, Physical Profiles, Army Retiring Boards, Line of Duty Boards; aren't they just as important? Of course they are important, but clinical records contain a copy of all these Boards; if not the actual Board Proceedings, they at least have the findings of such boards. Another thing, too, is that they are so detailed that they are simply priceless documents to those who need to substantiate their claims. Doctors in the field consider them most valuable when doing research, teaching, or treating other cases. The Individual Medical Records tie right in with the Clinical Records. They account for the patient, in brief, from the time of injury until final disposition is effected. They further substantiate some of the details as to the "how" and "when" found in the Clinical Record.

INDIVIDUAL MEDICAL RECORDS IN GENERAL. - The Individual Medical Records comprise:

(1) The Emergency Medical Tag - abbreviated as EMT (WD AGO Form 8-26) old (WD MD Form 52b)

(2) The Field Medical Card - (WD AGO Form 8-27) old (WD MD Form 52c)

(3) The Medical Report Card - (WD AGO Form 8-24) old (WD MD Form 52a)

There is a form that is initiated when the Field Medical Card is prepared which functions merely as an envelope for the Individual Medical and Clinical Records. This is known as the Field Medical Record Jacket (WD AGO Form 8-28) old (WD MD Form 52d). It is not a medical record, but merely an envelope.

Individual Medical Records are required: (1) On each Army patient admitted to an Army, Navy, Marine, Allied or Civilian Medical installation. (2) On each non-Army patient hospitalized in an Army hospital. (Non-Army patients are Veterans, Civilian Dependents, Retired Military Personnel and Red Cross Personnel, Navy, Marine and Public Health

Officer.) (3) On each Army and non-Army patient carded for record only.

Carded for record only cases includes those that are treated on an out-patient basis for a disease or injury that is most likely to result in partial or complete disability. It also includes new venereal disease cases, wounded in action, pregnancies, patients on an out-patient basis, and personnel killed in action.

Each medical installation uses only one type as their Individual Medical Record. When an Army person is admitted to a non-Army hospital, the nearest Army medical installation is assigned the responsibility for the case. This includes the preparation of an Individual Medical Record to account for the patient from the time he or she is admitted to the Non-Army hospital until transferred to any Army hospital, or returned to duty.

PURPOSE AND USE OF EMERGENCY MEDICAL TAG. - (WD AGO Form 8-26) old WD MD Form 52b). - Aid Stations, collecting stations and clearing stations use the EMT as their Individual Medical Record.

The immediate purpose of the EMT for sick and wounded cases is to supply medical officers, under whose observation the patient successively passes, with information as to the character of the patient's disability and the treatment administered enroute to a hospital. In killed in action cases, to prevent a loss of time by other medical personnel in examining the body, and to furnish information, as complete as possible, regarding the details of death. The EMT is initiated by the first medical officer of the Aid Station, Collecting Station or Clearing Station treating the patient prior to transfer to a hospital. For killed in action cases, the EMT is made out by a qualified member of the Medical Department who finds or examines the remains.

Although, in many cases, the EMT is filled out under trying combat conditions, care has to be taken to supply all important information. We must bear in mind that in many instances the EMT is the only Individual Medical Record relative to the patient. This is true not only of killed in action cases but also of many wounded in action and disease cases. We must bear in mind that incomplete or faultily completed EMT's will undermine any possibility for an adequate evaluation of the types of wounds inflicted or disease contracted, and the effectiveness of the treatment. We must also remember that incomplete or faultily completed EMT's may also jeopardize the individual's future claims for compensation or pension.

EMT's are also used by Unit Dispensaries in Theaters of Operations on Troop Transports and by Moving Commands in the Zone of Interior.

PURPOSE AND USE OF FIELD MEDICAL CARD.- The Field Medical Card (WD AGO Form 8-27) old (WD MD Form 52c) is used by numbered fixed and non fixed hospitals wherever located, as their Individual Medical Record (this includes Evacuation, Surgical, Field, Convalescent, Station and General Hospitals that are numbered). The Field Medical Card consists of five folds; each fold represents a separate individual Medical Record to be used by each separate numbered fixed or non fixed hospital as the Individual Medical Record, as the patient successively passes through the Medical Chain of evacuation. When a patient arrives at a numbered, fixed or non fixed hospital, from an Aid Station, Collecting Station, Clearing Station, Unit Dispensary in Theater of Operations, troop transports or moving command, the Field Medical Card is initiated. Both the EMT and the Field Medical Card plus allied papers are placed in the Field Medical Record Jacket (8-28) old (WD MD 52d) and attached to the patient's clothing or kept at his bedside. The Field Medical Record Jacket is the envelope that I told you about a few minutes ago; as you remember, it is not a Medical Record. The EMT, the Field Medical Card, and allied papers placed in the envelope or Jacket are called the Field Medical Record, abbreviated as the FMR.

In addition to the numbered fixed and non fixed hospitals using the Field Medical Card, Hospital Ships and fixed Dispensaries (General Dispensaries) will also use the Field Medical Card as their Individual Medical Record and, of course, the Field Medical Record Jacket.

PURPOSE AND USE OF MEDICAL REPORT CARD. - So far I have covered two types of Individual Medical Records, the EMT (WD AGO Form 8-26) old (WD MD Form 52b) and the Field Medical Card (WD AGO Form 8-27) old (WD MD Form 52c). Now comes the third and final type of Individual Medical Record, the Medical Report Card (8-24) old (WD MD 52a). This is the Individual Medical Record that is used by unnumbered, named General Station Hospitals, such as Oliver General or Station Hospital at Fort Benning. It is also used by fixed and Unit Dispensaries in the Zone of Interior. The Surgeon General is most critical when it comes to this record. You can readily tell if you have a good Sick and Wounded Section, based on the number of these records that the Surgeon General bounces back for correction. It is at this time when you must have available in your office the proper Regulations, Technical Bulletins and a Medical Dictionary for your staff. It is also at this time that you establish a Register of Sick and Wounded which is accomplished by merely assigning a number to each case admitted or carded for record only, such numbers to run consecutively.

The Medical Report Card is prepared in duplicate; when the patient completes hospitalization. The EMT, the Field Medical Card, and the original Medical Report Card are forwarded to the Surgeon General with the Sick and Wounded Report for the month. The duplicate is retained as the hospital's permanent record. If the patient is

transferred to another hospital, the EMT, FMC and original Medical Report Card goes to that hospital, the duplicate is always retained. In any event, the hospital which makes final disposition of the case forwards the EMT, FMC and the original Medical Report Card to the Surgeon General, with the monthly Sick and Wounded Report.

PURPOSE AND IMPORTANCE OF INDIVIDUAL MEDICAL RECORDS. - These three types of Individual Medical Records provide a consecutive medical report or record on each patient from the time he is wounded in action, injured or contracts a disease, until he is finally disposed of. There are no other Medical Department records that I know of that give an original first hand account of each case. It should not be difficult to see why these records are so important. I, therefore, reiterate that we must bear in mind that unless all these records are prepared properly, especially the Emergency Medical Tag, we are not only undermining proper medical treatment, but also jeopardizing the individual's future claims for compensation or pension.

CLINICAL RECORDS SIMPLIFIED IN FORMAT AND NUMBER. - Let us step aside from the Army for a few minutes and I shall attempt to explain how a standardization committee simplified in format and number the Clinical Records for all Federal hospitals.

Today, it is illegal to be born in the United States unless a form, the birth certificate, is completed and filed with the proper authorities. When we die we cannot be buried until another form, a death certificate, is filled out. Between the periods of birth and death our daily comings and goings are recorded on thousands of forms.

Many of the record forms are completed in the hospitals of the country. During 1948, forms probably were completed for about 16,000,000 hospital patients and several million additional out-patients. The number of different records for the same type of case probably was nearly as large as the number of different hospitals when treatment was given.

Just the magnitude of the job was enough to indicate that every hospital should review its standard forms to make sure that they served current needs. It was recognition of this fact that led to the appointment of the federal government's Interagency Committee on Medical Records to study both clinical records and medical examination forms.

In December 1945, President Truman appointed Dr Harold W. Dodds, president of Princeton University, chairman of a committee to study the medical care provided by the various government agencies. This committee was known as the Committee on Integration of the Medical Services of the Government. The committee members submitted a report to the President in June 1946 recommending, among other things, the establishment of a committee to study medical records in use by federal medical agencies.

In the autumn of 1946, the Interagency Committee on Medical Records was established. It had representatives from the Army, Navy, Public Health Service and Veterans Administration. This committee had a broad mandate to review all medical records used by federal agencies and to develop standard forms for all agencies.

The use of common clinical records is especially important for federal medical services. A beneficiary of the Veterans Administration may be treated in a hospital operated by the Public Health Service, the Army or the Navy. Since a member of the armed forces treated in a military hospital during service may become a beneficiary of the Veterans Administration after discharge, the exchange of medical data among agencies is frequently required.

CLINICAL RECORDS IN DETAIL. - Last spring the committee members reached an agreement on a basic set of 35 clinical record forms believed to be adequate for the majority of patients admitted to a general hospital. These were recommended for standardization to the Bureau of the Budget, which promulgated regulations governing their use by all federal agencies, on August 26, 1948.

Of the 35 forms, 13 are laboratory reports and one is a radiographic report similar in design to the laboratory reports. One form necessary in a complete clinical record series is not included. This is the sheet containing administrative information concerning the patient. It is known as the face sheet or the admission sheet. We in the Army call it the 55a or 8-33. The requirements for administrative data vary so widely among the federal agencies that the use of a common face sheet for the clinical record series was considered impractical at the present time.

The committee members felt that a clinical record is incomplete unless it is summarized. Two forms are provided for this purpose, a narrative summary prepared by the physician or surgeon handling the case and a diagnostic summary. The diagnostic summary contains an excerpt from the standard certificate of death for entering the cause of death, if necessary.

The forms are designed to be bound at the top and are printed head to foot so that the back of the record may be read when the record is turned. Space for the patient's name, register number and ward number, is left at the bottom of each form except that of the laboratory reports, on which it appears at the top. Space for the name of the hospital also appears on the bottom of each form. The title of the form is repeated in the lower right hand corner of each form for ease in identification after binding. This format and method of binding provide the best use of the available space on the forms and made each form readily accessible after binding in the clinical record folder.

In addition to the usual identification items, the diagnostic summary, the narrative summary and the consultation sheet contain space for the identification number and the organization of the patient. Although these items are not necessary for hospital use, it is planned that these forms will be used in a health record for military personnel. This is being developed by the Interagency Committee.

Standard Form 507 - report on or continuation of - deserves special mention. This form serves either as a continuation sheet for other forms in the series when more space is required, or as a separate form for a number of purposes. These purposes may be physical therapy, occupational therapy and social history for which special forms are not included in the series. In this way the number of separate forms has been reduced.

The widespread use of whole blood and blood elements for hospital patients led to the inclusion of a blood transfusion form. This record contains space for the original order for blood, certification and cross matching and transfusion record. All of this is on the same page in order to reduce errors to a minimum.

This series of clinical forms does not contain any forms for particular diseases. Although many hospitals use special records for patients with tuberculosis, diabetes, cancer or similar diseases, the committee members felt that the inclusion of such forms would increase unnecessarily the number of record forms for a general hospital. Consequently, in this series there are general purpose forms which can be used for all types of cases.

Considerable argument arose over the temperature scale to be used on the temperature, pulse and respiration form. Since some hospitals use the Fahrenheit while others use the centigrade scale, both scales are included on the form. The two scales are not convertible in integral degrees, hence the scale of centigrade degrees has a maximum error of 0.05 degrees.

The committee members are considering a small number of special forms to supplement those already developed. Among these will be forms for prenatal care, obstetrical cases, neurological examination, radium therapy, general muscle examination and pneumothorax.

The first year is experimental. At the end of a year, the experience in the use of the forms will be reviewed and, if desirable, the forms will be revised.

USE OF CLINICAL RECORDS IN ARMY. - Let us go back to the Army now and find out where and how these records are used. Clinical Records are used by Un-numbered (named) hospital and by numbered fixed hospitals.

This is what the Regulations say. Other hospitals, such as Evacuation, Field and Surgical hospitals are supposed to use a Clinical Index instead of a Clinical Record. A Clinical Index is a card on which brief diagnostic descriptions are kept, that is in addition to the patient's name, rank, ASN, and organization. The Clinical Records are filled out in the same manner as the corresponding entries on the Individual Medical Records. The number of forms that will be prepared on each case will be such as the case warrants. In other words, a Form MD 55a or WD AGO 8-33 is prepared on each case, from then on the more special treatments and examinations the patient has and the longer he remains in the hospital, the thicker the Clinical Record will be. Each hospital then has its own Clinical Record on the case to account for the patient's hospitalization and treatment. Again, it should not be difficult to see how detail these records are and why they are so valuable. Some of the men who were wounded in action or who contracted a disease in the islands will gladly tell you how valuable records were to them when time came for them to retire from the Army for disabilities.

We will now take a quick review of the Individual Medical Records by following a case from the time of injury overseas until final disposition.

MEDICAL STATISTICS IN THE ARMY

MAJOR HAMPTON L. ANTLEY, MSC
Oliver General Hospital, Augusta, Georgia

Webster defines statistics (1) "Systematic compilation or use of facts or instances for general inferences; (2) Classified facts effecting the condition of the people in a state or respecting any particular class or interest or matter especially those facts which can be stated in numbers."

We all know that numbers are an important part of the Army. We are assigned one immediately upon entrance to the Army, either on reserve or regular status. We further know that all large organizations, regardless of the type of business such as Sears Roebuck, Ford Motor Company, Standard Oil or any of thousands of large companies use statistics. We can also appreciate that with our Armed Forces Budget spending about 15 billion dollars per year of the tax payers money, some form of statistics must be maintained. Major Rojo has attempted to point out to you the importance of medical and clinical records which we use today. I would like to point out to you something of the Medical Statistics as we use them. We here at Oliver General Hospital are required to prepare the WD AGO Form 8-122, Statistical Health Report, each week (Figure 35). The period covered is from midnight to midnight each Friday. This information is required by the Army Commander, the Surgeon General and other high commanders such as the Air Surgeon and commanders of overseas commands. The report is required from all units operating a hospital or separate dispensary, with very few exceptions, which are operated for the purpose of providing medical care for Army personnel. The Medical Officer commanding is responsible for the preparation of this report.

The form is divided into ten parts, namely -

- a. Mean strength.
- b. Admission, disposition, and total number of Army patients under treatment.
- c. Army neuropsychiatric cases.
- d. Patients occupying beds.
- e. Days lost by Army patients.
- f. Days lost by Army patients due to VD.

IX. REPORTABLE CONDITIONS									
DIAGNOSES		CASES REMAINING FROM LAST REPORT (1)	CASES ADDED SINCE LAST REPORT				CASES DISPOSED OF SINCE LAST REPORT		CASES REMAINING UNDER TREATMENT (8)
			(5) BY DIRECT ADMISSION AND CHANGE OF DIAGNOSIS TOTAL (2)	BY TRANSFER IF DIAG- NOSIS IS CONCURRED IN READ MITTED (3)	DISPEN- SARY (4)	HOSPITAL (5)	DEATHS (6)	OTHER- WISE (7)	
DISEASES TRANSMITTED BY DISCHARGES OF THE RESPIRATORY TRACT	45 *COMMON RESPIRATORY DISEASES								
	46 *DIPHTHERIA								
	47 *INFLUENZA								
	48 *MEASLES								
	49 MEASLES, GERMAN								
	50 *MENINGITIS, MENINGOCOCCIC								
	51 *MUMPS								
	52 PNEUMONIA, PRIMARY (not atypical)								
	53 *PNEUMONIA, PRIMARY ATYPICAL								
	54 *PNEUMONIA, SECONDARY								
	55 *SCARLET FEVER								
	56 *STREPTOCOCCAL SORE THROAT								
	57 *TUBERCULOSIS, ALL FORMS								
58 VINCENT'S ANGINA									
INTESTINAL DISEASES	59 BACTERIAL FOOD POISONING								
	60 *COMMON DIARRHEAS								
	61 *DYSENTERY, BACILLARY								
	62 *DYSENTERY, AMEBIC								
	63 *DYSENTERY, UNCLASSIFIED								
	64 *PARATYPHOID FEVER								
65 *TYPHOID FEVER									
INSECT-BORNE DISEASES	66 *DENGUE								
	67 *FILARIASIS								
	68 *MALARIA ACQUIRED IN U. S.								
	69 *MALARIA ACQUIRED OUTSIDE U. S.								
	70 *RELAPSING FEVER								
	71 *TYPHUS FEVER								
72 *SAND FLY FEVER									
MISCELLANEOUS DISEASES	73 *HEPATITIS, INFECTIOUS								
	74 *ENCEPHALITIS, INFECTIOUS								
	75 MYCOTIC DERMATOSES								
	76 *POLIOMYELITIS, ACUTE ANTERIOR								
	77 RHEUMATIC FEVER								
	78 SCABIES								
	79 *TETANUS								
	80 FEVER OF UNDETERMINED ORIGIN								
	81 GAS GANGRENE								
VENEREAL DISEASES	82 *TRENCH FOOT								
	83 GONORRHEA								
	84 SYPHILIS								
*SPECIAL NOT LISTED	85 OTHER VENEREAL								
	86								
	87								
	88								
	89								
90									

X. "NEW" CASES OF VENEREAL DISEASES ADMITTED					DATE
DIAGNOSIS	ARMY (excl. W.A.C.)		W.A.C.		TYPED NAME AND GRADE
	WHITE (1)	COLORED (2)	WHITE (3)	COLORED (4)	
91 GONORRHEA EPTS					SIGNATURE
92 GONORRHEA NOT EPTS					
93 SYPHILIS EPTS					
94 SYPHILIS NOT EPTS					
95 OTHER VENEREAL EPTS					
96 OTHER VENEREAL NOT EPTS					

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Figure 35 (Contd.).

- g. Hospitalization data.
- h. Miscellaneous.
- i. Reportable conditions.
- j. "New" venereal diseases admitted.

The report is prepared here each Monday for the previous week. The original is mailed to the Surgeon General, the duplicate to Third Army Surgeon and the triplicate is filed. Two extra copies of page 2, only, are prepared also weekly and are disposed of as follows: One to the County Health Department in Augusta and the other copy to the Hospital Inspector. The number of copies vary in different commands and I will not try to cover all situations, and the reports from Air Force Stations and overseas units vary depending on local regulations and directives. Under exceptional circumstances, some or all sections of this report may be required daily. This is rare and, except during an alarming epidemic, not usually required. Reports from overseas by the theater Surgeon are required by radio if they are to be unduly delayed. If they can be air mailed within one week, the radio report is not usually required. The air mail report will eliminate cryptographing and decryptographing because this type of information coming to the US from an overseas base would usually be "Classified Material." On large posts such as Fort Bragg and Fort Benning, unit surgeons prepare and send their report to the post surgeon. He compiles and consolidates the unit reports into one report and mails it to The Surgeon General and Army Surgeon. When a unit is inactivated, a "Final Report" is rendered. When a unit is first activated, it will begin with an "Initial Report." When an error is discovered after a report has been rendered a "Corrected Report," so labeled, usually at the top of page one, will be immediately rendered. Parts four and seven show all patients in hospital, including dependents, Civil Service, veterans, etc. The entire report is primarily for Army personnel on active duty status except for the two parts just mentioned. The form is broken down into White and Colored. Negroes are shown under Colored and all other personnel are shown as White. In space "A," at top of page, the unit and geographical location is shown. The month, day and year is shown in space "B" at top of page. This will usually be a Friday. The report loses its value if not rendered promptly.

Now we come to Part I, "Mean Strength." All this means is the daily average strength of the command during the reporting period. It is required to be broken down into White Army, White WAC, Colored Army and Colored WAC, total White, total Colored, and total of both.

Next we deal with Part II of the form. Please bear in mind that this part deals only with Army personnel. This part of the report covers Army personnel admitted and not returned to duty the same day

and personnel carded for record only such as Medical discharge (CDD) not currently patients excused from duty and Venereal Disease cases, not previously treated for the same current conditions, which are treated on Out-Patient Status. Line 2, "Remaining from Last Report," will be taken from line 14 of previous week's report. Direct admissions, line 3, will be properly divided into disease, injury and battle casualty cases admitted to hospital, quarters and dispensary, and the aggregate of each. On line 4 are shown admissions by transfer from quarters or dispensary and admissions from other hospitals. Line 6 will show totals under hospital, dispensary and aggregate columns. We now come to dispositions during the report week. Line 7 will show all cases returned to duty, line 8 all transfers, line 9 all deaths, line 10 CDD, line 11 is not applicable except in overseas commands. On line 12 will be shown all AWOL cases in excess of 10 days, discharge for inaptness, discharge to inactive status and any other dispositions not specifically mentioned above. Line 13 will reflect the total dispositions for the week. Line 14 will show the number remaining at close of report period.

We will now take up part III of the report, which deals only with Army Neuropsychiatric cases. The cases remaining from previous report are shown, plus all new admissions, by transfer and direct, and the total under care. Then show dispositions and those remaining on last day of report. This section includes all psychiatric and organic neurological cases. It is broken down into open and closed wards. All cases of psychoneurosis, psychosis, constitutional psychopaths, mental deficiencies, operational fatigue, flying fatigue, shell shock and other psychiatric disorders will be recorded in part 3.

We now take up part IV of the form. Here is an important change from the three previous parts. All patients in hospital are shown. It is broken down into White and Colored as in Part I, above. This part must show all patients in hospital for definitive treatment and also those in convalescent hospitals on the last day of the reporting period. This part of the report includes only those patients who are occupying beds and does not include bassinets.

Next is part V, days lost by Army patients during the report week. Only Army personnel are shown here. Days lost by Army patients in other than Army hospitals will be included also. That is, if an Army patient is in a Veterans Administration, Naval, US Public Health or civilian hospital, his days lost will be included in this part.

In part VI, we again include only Army personnel broken down into White and Colored Army and WAC shown separately.

In part VII, the recorded information will vary considerably depending on what type of hospital you are reporting from. The constructed

bed capacity means the number beds which can be accommodated based upon the number of square feet of floor space available for patients. The authorized bed capacity in our case here at Oliver is 1,500 at present. This is set by The Surgeon General. Our personnel allotments and equipment are based on these figures. We are not now running a convalescent hospital. Over on your right side of Part VII, record the patients in the reconditioning program. Briefly, a patient in Class IV is the sickest of the four and one in Class I is the nearest to returning to duty.

We now take up part VIII, "Miscellaneous," Line 35. Just for an easy example, suppose we have a total of 10 patients remaining on Line 14, Column 10, multiply this 10 by 100, then divide that by 200 (theoretical) on line 1, column 7, for total Army Mean Strength. We arrive at 5 and that would be our percent remaining sick on last day of report period. The next line, 36, is self-explanatory. One line 37, under "Remarks," part VIII, we are required to show the following information: Patients remaining in convalescent hospitals broken down into disease, injuries and battle casualties. The number of evacuees remaining broken down in diseases, injuries and battle casualties. Here will also be shown the number of patients admitted by transfer from General Hospitals and Convalescent Hospitals, also the number of Veterans Administration patients and number occupying beds.

Part IX, "Reportable Conditions." It is broken down into respiratory, intestinal, insect-borne, miscellaneous, venereal and special diseases. First, we record in Column 1 the numbers shown in Column 8 of the report of the previous week, add the new cases, then deduct the dispositions for period involved and show the remaining cases in Column 8. Under "Special Not Listed," we would report cases of rabies, smallpox, cholera, yellow fever, and any other communicable diseases not listed.

The last but not always the least part of this report is Part X - "New" Cases of Venereal Diseases admitted. This is broken down into White and Colored, Army and WAC, also into EPTS and not EPTS. As I stated earlier, it is very important for all Medical Service Corps Officers to have brief knowledge of this report because it is rendered by all units attended by Army doctors with very few exceptions. Army Regulations 40-1080 prescribe the report in much more detail than I am able to include here.

SURGICAL PROBLEMS

COLONEL EARL C. LOWRY, M. C.

Chief of Surgical Service, Oliver General Hospital
Augusta, Georgia

COLONEL LOWRY:

It has been the policy of the Surgical Service at Oliver General Hospital, in conjunction with surgical training, to allow each resident to select a problem in which he is interested to be used as a research problem through his period of training. The purpose of this program this morning is to give reports and interim reports on some of the problems now under development.

For some time, the problem of obtaining a satisfactory instrument for liver biopsy has confronted us. Major George Alvari, Medical Corps, Senior Resident in General Surgery, this hospital, has been interested in this problem and has developed an instrument which he will now tell you about and demonstrate. (Figure 36)

MAJOR ALVARI:

In the University Hospital in Johannesburg, South Africa, a series of over 500 liver biopsies have been done without a fatality. The instrument used was one which used the principle of suction, drawing tissue into a large caliber needle. The primary disadvantages of this instrument was that it took some time to obtain the biopsy, and as a result, the patient took several breaths during the procedure, the liver moved up and down, and the resulting laceration caused hemorrhage.

To this group of doctors it need not be reiterated that liver biopsy is a useful technique and a potent weapon in our armamentarium used to obtain diagnoses. The instrument which is to be shown and demonstrated to you this morning is being shown in public for the first time. It is an improved version of the model described in the report from Johannesburg. The greatest advantage of this instrument is its rapidity of action. Careful machining, the use of meticulously fitted parts, and the adaptation of some of the new plastics to form air-tight seals, are factors which allow this instrument to be more efficient in obtaining the biopsy and very much more rapid in its action. A spring mechanism was contrived with the use of piano wire which may be released by the operator by pressing on a lever. With utmost rapidity,

a sharp, large gage needle revolves and cuts loose the pieces of tissue being biopsied. Because of this split-second action, the total time of the procedure from insertion to withdrawal is less than two seconds. This enables the patient to hold his breath, remain motionless, and thus reduces to a minimum the chance of hemorrhage.

I will demonstrate this instrument on some fresh beef liver and then any of you who desire may come up and examine the machine and try using it.

(DEMONSTRATION - Several successful biopsies were obtained from the fresh beef liver in the demonstration, and five or six doctors from the audience were successful at securing biopsy material).

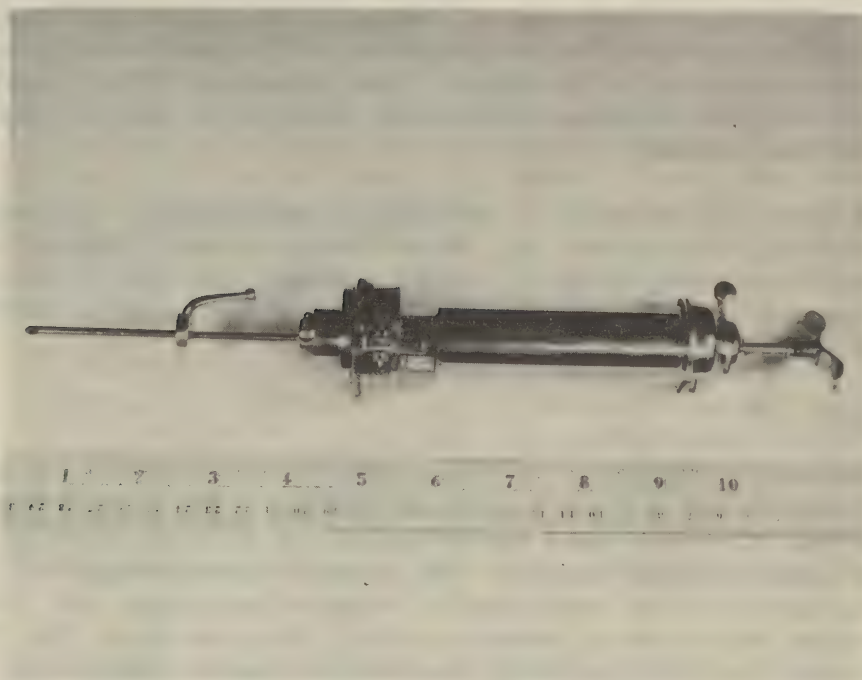


Figure 36. Instrument for Liver Biopsy.
(Oliver General Hospital)

COLONEL LOWRY:

In view of the fact that all of these problems will require clinical demonstration, we will present each problem entirely and completely, following which each speaker will demonstrate his equipment and data at the booths at the front of the room. I now present to you Lieutenant Colonel Marco R. Bonsignore, MC, Senior Resident in

Orthopedics, who will show you a case report illustrating our work with the intramedullary pinning of long bone fractures. We became interested in this problem while in Europe and have now mailed some 25 such fractures.

LT COLONEL BONSIGNORE;

The problem of intramedullary fixation of femoral fractures is an interesting and complex one. Many men have devised techniques and nails for intramedullary fixation, and today I want to report on a patient who had fixation with a Hansen-Street nail.

The patient sustained a simple fracture of the right femur on June 24, 1948. On July 9, 1948 reduction and fixation with a Hansen-Street intramedullary nail was performed. On the third day post-operatively, the patient was allowed to take a few steps and from then to the tenth day, he was ambulatory on crutches. After the tenth day, the crutches were discarded. From that time on, the patient remained ambulatory without complaint. Three months after the operation, the patient went horseback riding and indulged in all sorts of other activities. On the 14th of March, 1949, the Hansen-Street nail was removed and x-ray revealed a complete bony union of the femur. (Figures 37, 38, 39 and 40).

COLONEL LOWRY;

At the last meeting of the Joint Services Field Materiel Group, it was observed that the standard item for the administration of anesthesia in the field is quite large, weighing some one-hundred pounds, is contained in two packages, and is bulky. An effort was made at that time to initiate the development of a field model anesthesia machine which would be light, easy to use, and could be dropped by parachute. Lieutenant Colonel Charles H. Mitchell, MC, Chief of Anesthesia Section, this hospital, and his staff, set about some weeks ago the development of this problem. I will now present to you Major Robert A. Lau, MC, Senior Resident in Anesthesia, who will report on the progress of this project to date.

MAJOR LAU;

During the last war, it was demonstrated that static situations may rapidly become mobile and therefore, rapid evacuation of the wounded to the rear is necessary. The critical state of some wounded individuals requires surgical treatment in advanced areas. This requires that the anesthetist be equipped to handle all forms of physiologic emergencies. The number of open wounds of the chest makes it apparent that the anesthetist must have equipment which will permit transpleural operative procedures. This requires some sort of positive pressure

apparatus. For reasons which are obvious to this group of experienced officers, bulk and weight must be reduced to a minimum.



Figure 37. Fracture prior to insertion of Hansen-Street nail.
(Oliver General Hospital)

In Figure 41, we see a typical example of one of the commercially available anesthetic machines which is dependable and sturdy. These machines are valuable where frequent movement is not necessary. When dismantled and packed, the machine and container weigh 80 pounds. The equipment for intravenous, regional, and endotracheal anesthesia weighs 23 pounds. The equipment comes in two kits.

We have here tried to devise a simple anesthesia apparatus lighter more compact, and more easily transportable by hand.



Figure 38.

Femur with excellent position and alignment six weeks after surgery. Adequate callous formation is evident.
(Oliver General Hospital)



Figure 39.

Range of motion of the right hip and knee exhibited six weeks after operation.
(Oliver General Hospital)

Figure 42 shows two compact machines for use with mobile units. The small one on the right uses compressed oxygen and an ether vaporizer which needs no standard and can be clamped to the operating table and weighs only $17\frac{1}{4}$ pounds. The machine on the left of Figure 42 can also use compressed oxygen and ether vapor but the addition of the foot bellows makes it useful for positive pressure anesthesia even when compressed oxygen is not available. This machine also can be clamped to the operating table and weighs only $19\frac{1}{2}$ pounds. This anesthesia equipment can be housed in a single container and so will eliminate losses that so frequently occur when multiple small packages are handled. Design and specifications for a container have been prepared and a model is under construction.



Figure 40. X-Ray of femur at time of removal of Hansen-Street nail.
(Oliver General Hospital)

COLONEL LOWRY:

Another problem in which we have been interested is the repair of large herniae which have defects so big that one is unable to suture the fascia without a tissue graft. In this connection, the method previously described by Throckmorton and others has been pursued at this hospital. Many grafts have been made with the tantalum wire mesh. Lieutenant Colonel Carl T. Dubuy, MC, Resident, General Surgery, this hospital, is working with this problem. I will now present to you Colonel Dubuy.

LIEUTENANT COLONEL DUBUY:

As long as surgeons have been repairing hernias, they have dreamed of a patch to use on the cases of large tissue defects which cannot be closed. About 1900, there was a wave of enthusiasm for this method with silver as the patch. Discomfort for the patient from the rigid network, and the inherent inadaptability of silver for tissue implantation, and the surgeon's and patient's distrust of a foreign body in the tissue soon relegated this method into oblivion. Later, fascial grafts and skin grafts were used, and very recently, vitallium, tantalum, and certain plastics have been introduced as patch materials. Tantalum is extremely inert; there is no tissue reaction, it is flexible work hardens slowly, and has sufficient tensile strength to make it the most satisfactory material for implantation in the human body. It may be that plastics will prove more satisfactory, but at present their their lack of flexibility, tensile strength, and ease of handling are objections hard to overcome. We are now evaluating tantalum mesh for use in repair of herniae in which tissue deficiency is marked and conventional closures seem doomed to failure. Figures 43 to 48 show how the tantalum mesh implant is prepared, inserted, and how it enters into the repair of the hernia.

Usually the Bassini type of herniorrhaphy is used when using the tantalum mesh and the patch is placed over the fault and sutured with tension to the rectus sheath, internal oblique aponeurosis, public tubercle, and Poupart's or Cooper's ligament. The exit of the cord may be through the sheath of mesh or around an edge.

Figures 49 to 52 illustrate a case of an upper abdominal ventral hernia operated upon at this hospital. Tantalum mesh was used in the repair of the hernia defect. Figure 53 shows x-ray appearance of tantalum implant ten days after operation.

In conclusion, it is felt that the use of tantalum mesh as a patch to fill a large defect through which a hernia has come, is a satisfactory method of repair. A series of cases gleaned from the literature has been presented and a summary of the technique of use pre-

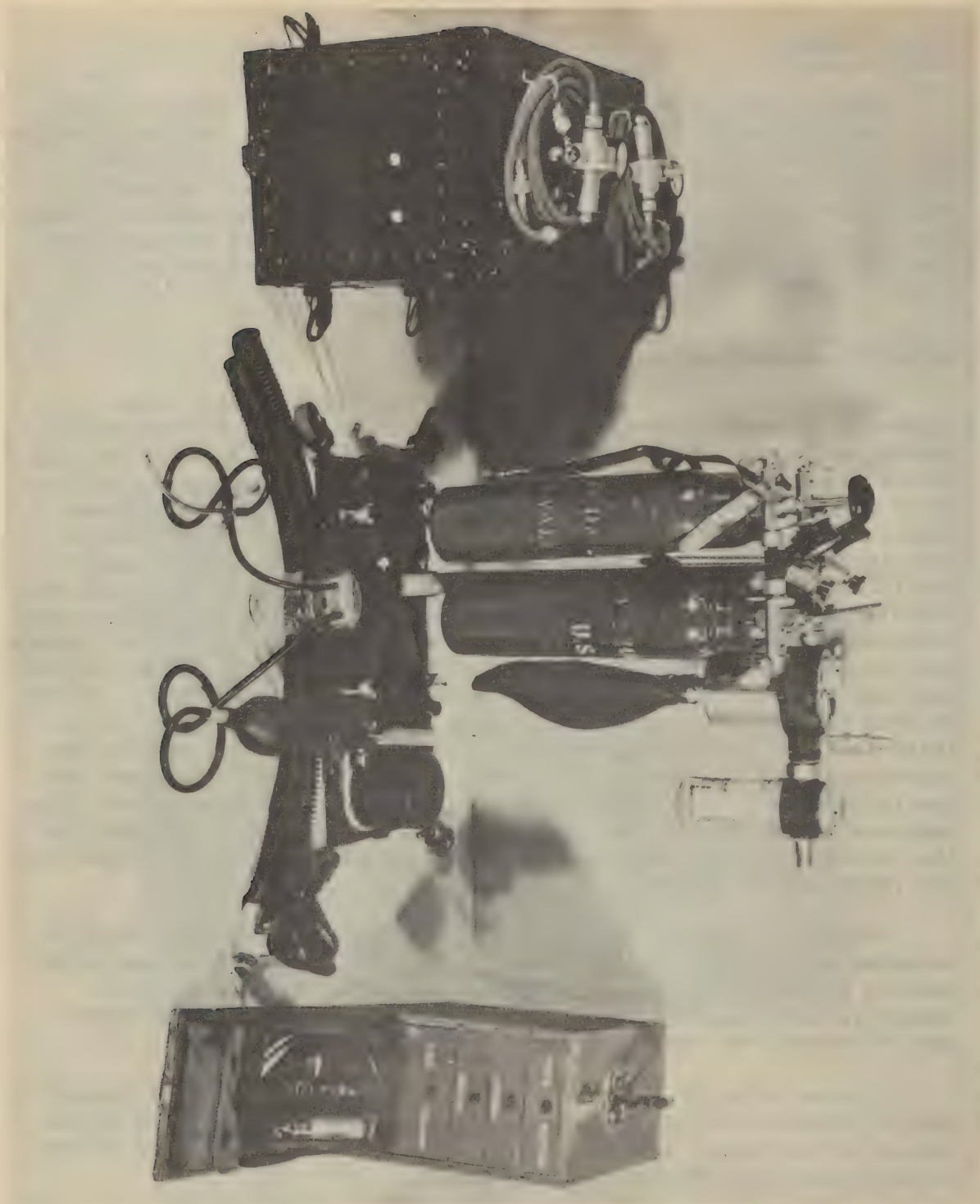


Figure 41. Anesthesia Machine Available from Commerical Sources

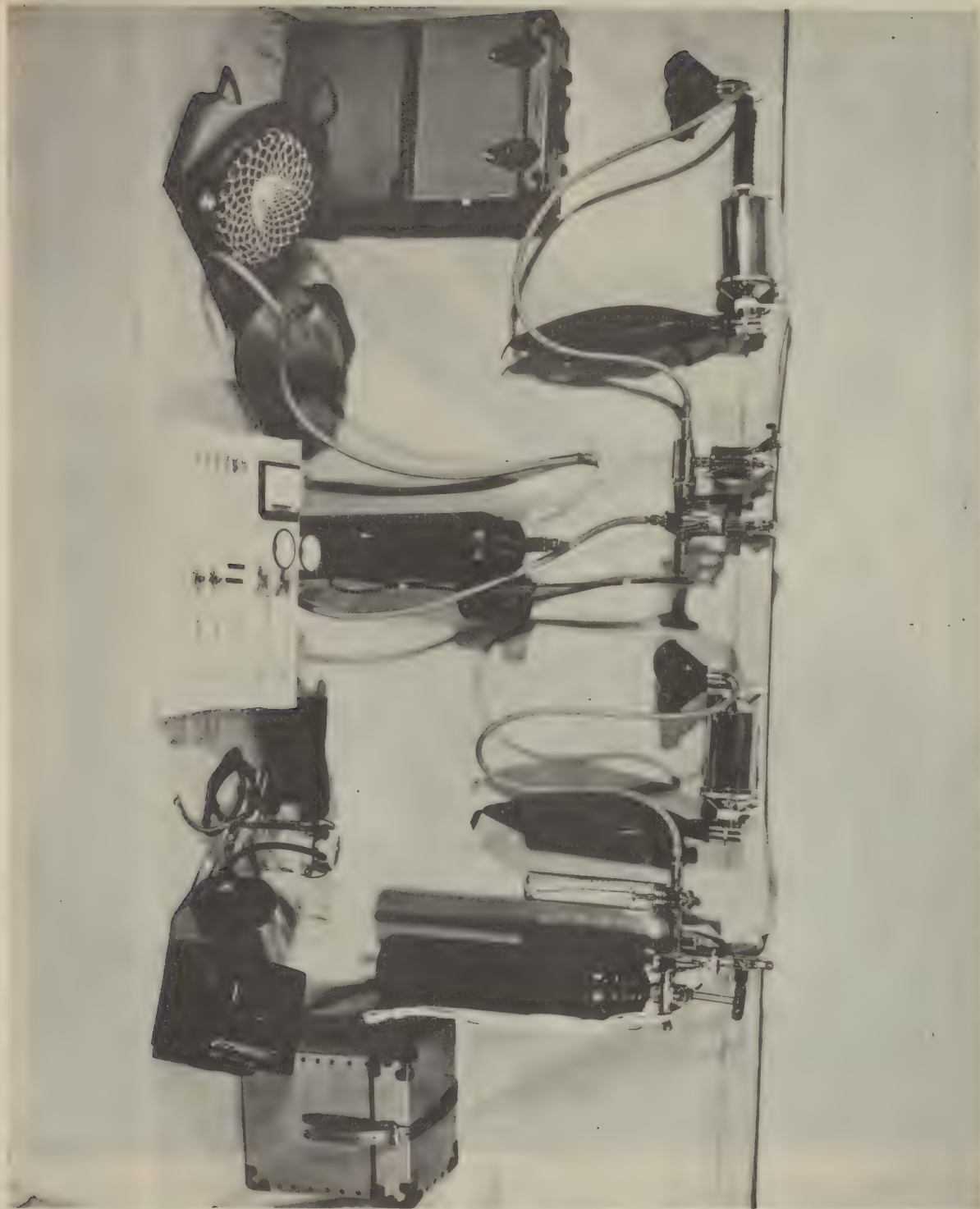




Figure 43. After the margins of defect are outlined and size of patch necessary for repair is determined the tantalum implant is easily prepared at the operating table. Size of implant is determined by the proximity of sturdy white fibrous tissue or aponeurosis to which the implant may be sutured. (Courtesy Ethicon Suture Laboratories)



Figure 44. Edges of tantalum mesh folded under approximately 1 cm as reinforcement for sutures and to avoid fraying. Simple or mattress sutures used through fibrous tissue and implant. Tantalum or silk sutures may be used.
(Courtesy Ethicon Suture Laboratories)

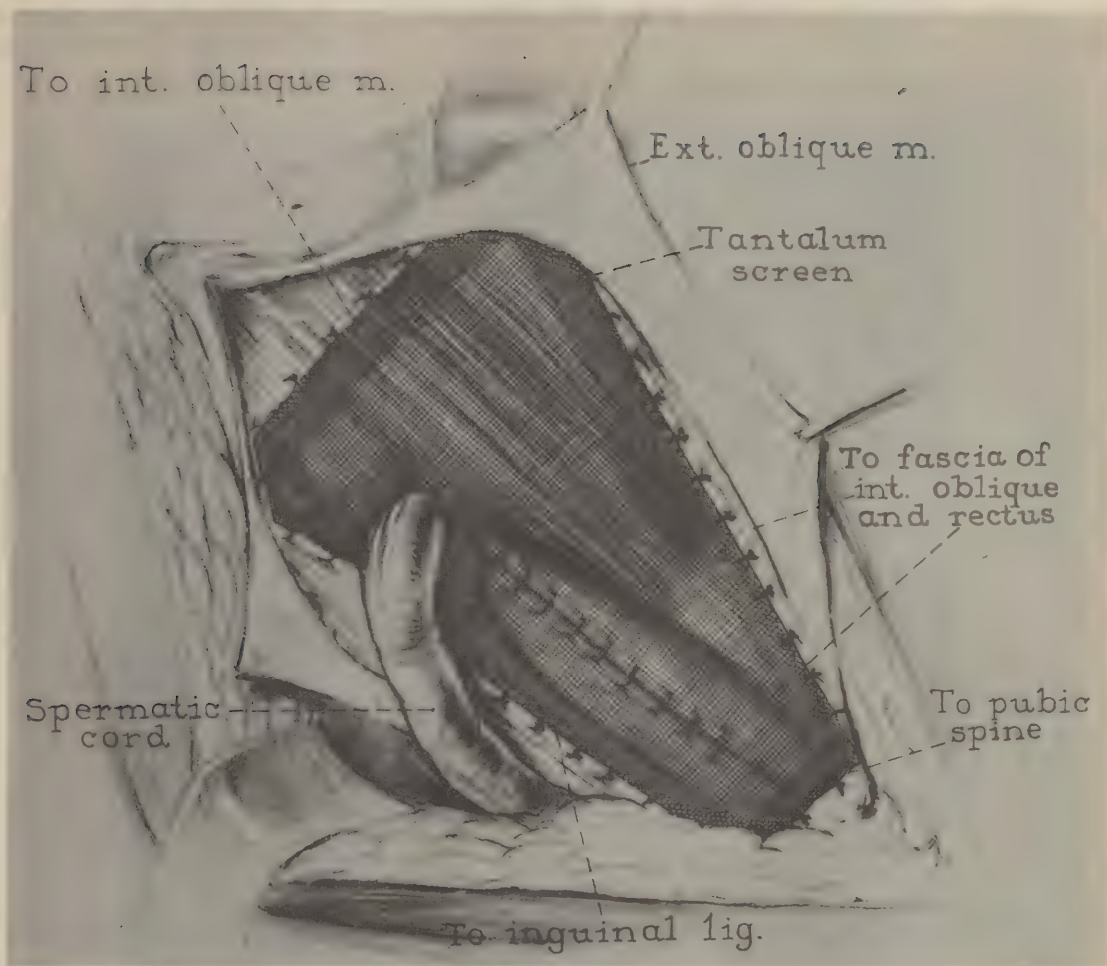


Figure 46. The hernial defect is covered by an implant of tantalum gauze. This is sutured medially to the periosteum of the pubis, the rectus fascia, and the fascia of the internal oblique. Laterally the implant is sutured to the shelving edge of the inguinal ligament. Superiorly, the sutures are taken in the internal oblique muscle and fascia. The spermatic cord is led through a defect in the lateral border of the implant.
 (Courtesy of Tom Dercum Throckmorton, M.D.)

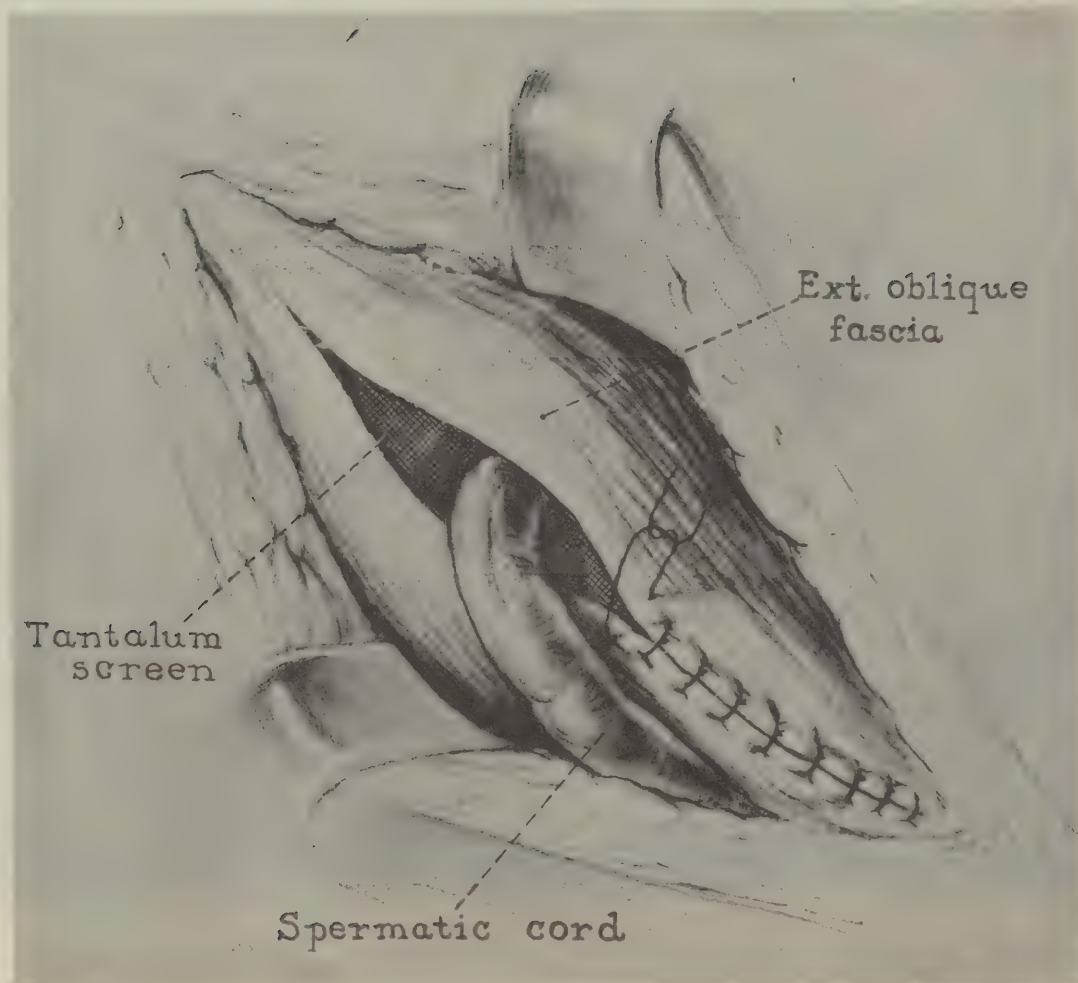


Figure 47. Third stage of Throckmorton's technique of tantalum gauze inguinal herniorrhaphy. The fascia of the external oblique is sutured above the implant, placing the spermatic cord in a subcutaneous position.
 (Courtesy of Tom Dercum Throckmorton, M.D.)

sented

(DEMONSTRATION: Some pieces of tantalum mesh were exhibited and x-rays and photographs of patients who have had the tantalum mesh repair were displayed).

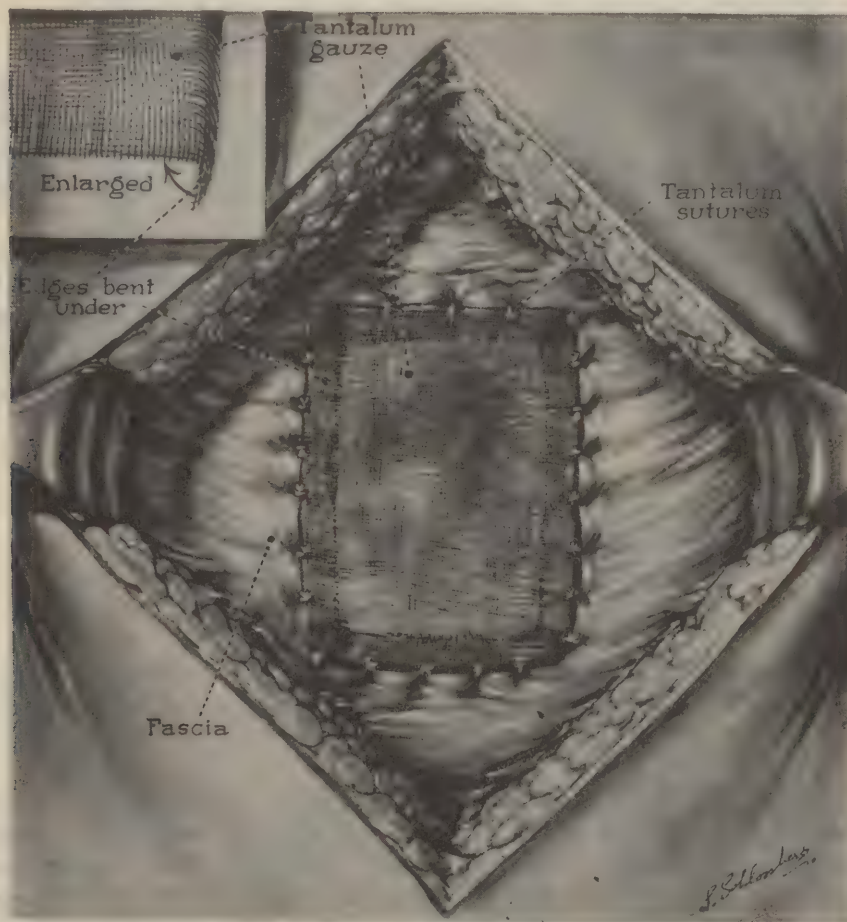


Figure 48. Ventral hernia repair. Tantalum implant is sutured to anterior rectus sheath.
(Courtesy of Amos R. Koontz, M.D.)

COLONEL LOWRY:

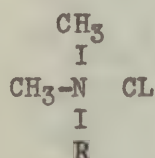
I note that there are several battalion surgeons in the audience. All of you will recall the difficulties in Field Medical Service with the problem of sterilization. The Coleman stove is big, difficult to handle, and too frequently does not light at all. At the suggestion of the Joint Services Field Materiel Board, some work was undertaken

in the realm of cold sterilization in the field to see if a method could be worked out which would eliminate the stove altogether, or at least, in certain geographic areas. Lieutenant Colonel John M. Hale, Sanitary Corps, and Major Robert A. McCall, Resident, General Surgery, have been working on this problem. I will now present to you Lieutenant Colonel Hale who will show you what he has been doing.

LIEUTENANT COLONEL HALE:

The bulky equipment, the need for fuel, and problem of time make the autoclave sterilization of equipment used by forward hospital units in World War II unsuitable. In a search for more compact equipment for sterilization, the use of highly active and powerful disinfectant solutions suggests itself.

This study has just begun, hence our data is neither complete nor conclusive. A number of proprietary disinfectant solutions have been submitted for our study. These disinfectants all fall into a single class of chemical substance being Quaternary Ammonium compounds with the general formula of:



Our tests show this series of agents to have a potency varying between 44 and 400 times that of phenol when tested with *Staphylococcus Aureus*.

All of these agents in water solution rust or tarnish instruments unless a reducing agent is added to the solution. A satisfactory reducing agent seems to be sodium nitrite. None of these agents are as highly satisfactory in the acid pH range as in the alkaline range; hence, whenever these agents are used in water of an unknown pH , a buffer must be added.

(DEMONSTRATION: Samples of the various antiseptics were demonstrated.)



Figure 49. Ventral hernia. Patient 43% over-weight
(Oliver General Hospital)



Figure 50. Lateral view of case shown in Figure 49 Tissue defect measured 4 in by 6 in. Repair could not be accomplished by conventional methods. Tantalum implant used measured 13cm x 18cm.
(Oliver General Hospital)



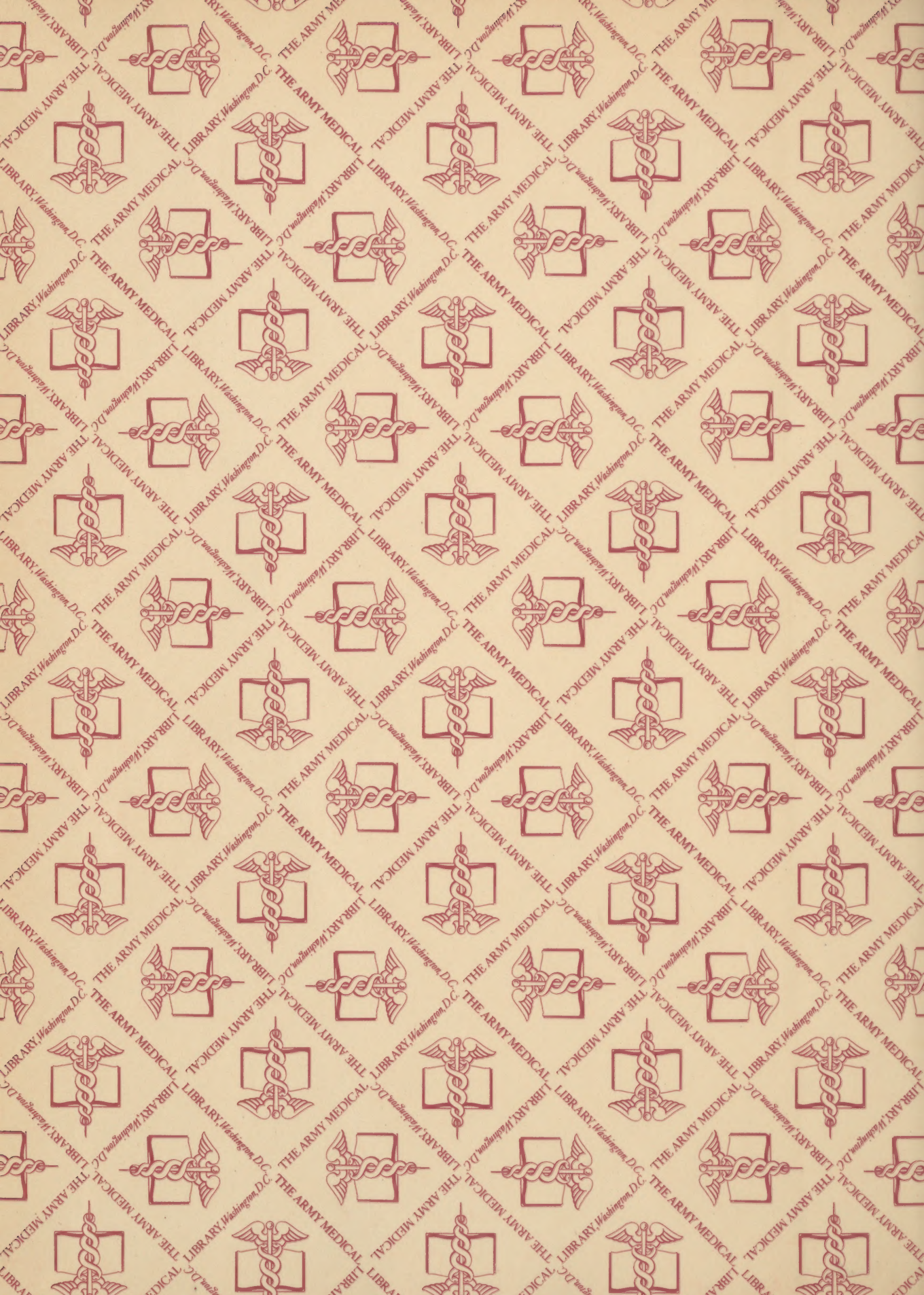
Figure 51. Same case as shown in Figures 49 and 50 two weeks after operation.
(Oliver General Hospital)

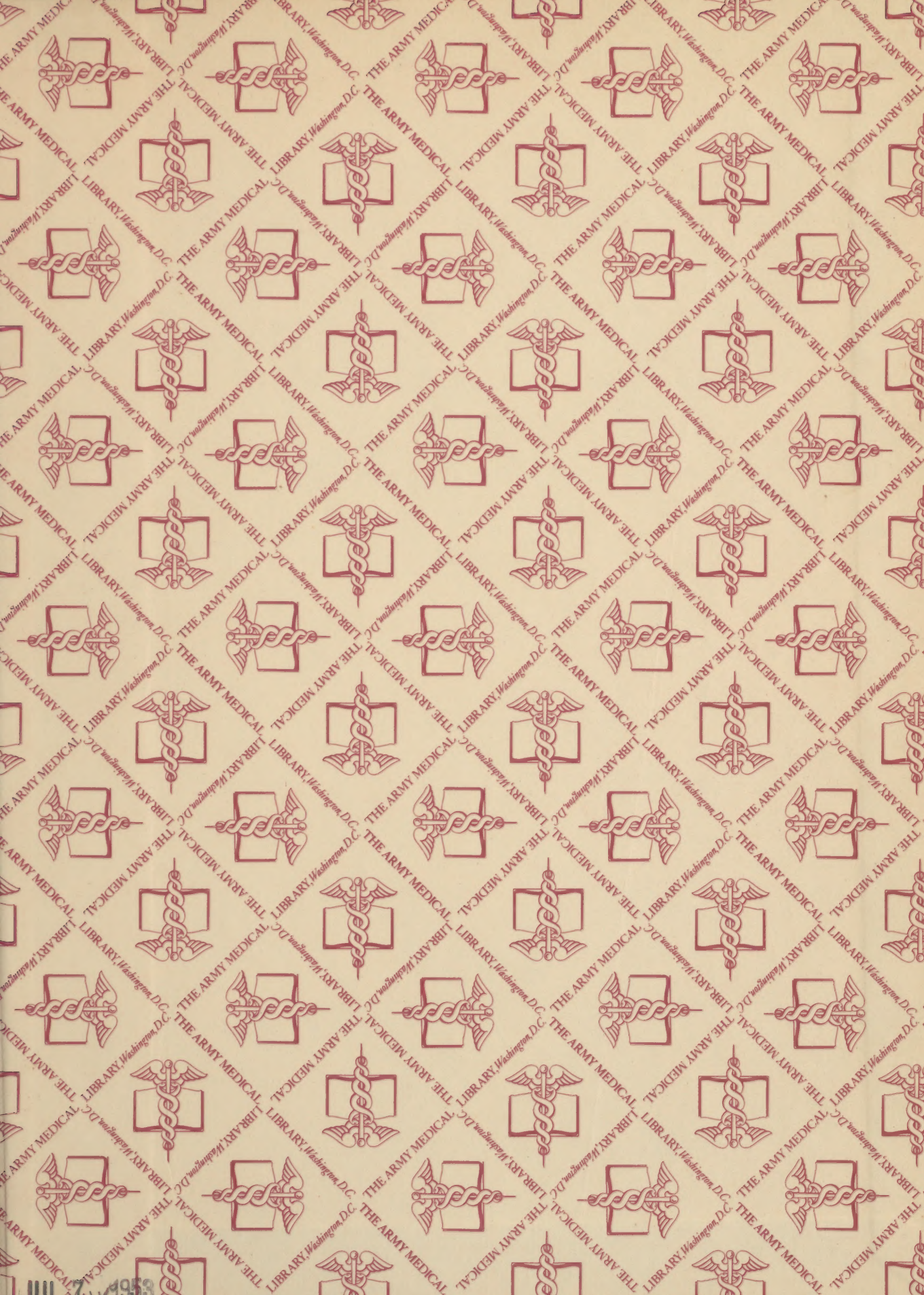


Figure 52. Lateral view of patient shown in Figure 49 and 50 after operation.
(Oliver General Hospital)



Figure 53. X-Ray appearance of tantalum implant in upper abdomen 10 days after operation for repair of ventral hernia shown in Figure (Oliver General Hospital)





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